SLV-E811NP/VC1/VC2

RMT-V192

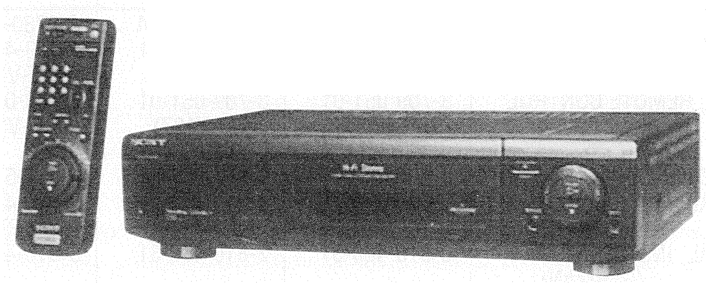
SERVICE MANUAL

German Model

SLV-E811VC1/VC2

Spanish Model

SLV-E811NP



Hi-Fi

SHOWVIEW

H MECHANISM

Difference Manual

The service Manual for this set contains only the points which differ is bound together with the following Service Manual and therefore please refer to them.

SLV-E811NP → SLV-E810NP
SLV-E811VC1/VC2 → SLV-E810VC

See next page for defference part.

- **Main unit**
  SLV - E510EE/E510VC1/E510VC2
  - E710B/E710EX/E710NC
  - E710NP/E710UX/E710VC
  E710VP
  - E810B/E810BZ/E810EE/
  E810NP/E810UX/E810VC

  9-973-851-11
  Service Manual

- **Mechanical Adjustment**
  VHS MECHANICAL ADJUSTMENT V (9-973-623-11)

SPECIFICATIONS

System
PAL (B/G)
VHF E2 to E12
VHF Italian channel A to H
UHF E21 to E69
CATV S01 to S05. S1 to S20
HYPER S21 to S41
RF output signal
UHF channels 28 to 55
Aerial out
75-ohm asymmetrical aerial socket

Inputs and outputs
⇾ EURO-AV (LINE-1)
PAY-TV DECODER/CANAL+
21-pin
Video input: pin 20
Audio input: pins 2 and 6
Video output: pin 19
Audio output: pins 1 and 3
LINE-2 IN
VIDEO IN, phono jack (1)
1 Vp-p, 75 ohms, unbalanced, sync negative
AUDIO IN, phono jack (2)
Input level: 327 mVrms
Input impedance: more than 47 kilohms
AUDIO OUT
Phono jack (2)
Rated output level: 327 mVrms
Load impedance: 47 kilohms
Output impedance: less than 10 kilohms

General
Power requirements
220 – 240 V AC, 50 Hz
Power consumption
25 W
Operating temperature
5°C to 40°C
Storage temperature
–20°C to 60°C
Dimensions
Approx. 430 × 109 × 323 mm (w/h/d)
including projecting parts and controls
Mass
Apperox. 4.7 kg

Supplied accessories
Remote commander (1)
R6 (size AA) batteries (2)
Aerial cable (1)
Audio cable (1)
Mains lead (1)

Design and specifications are subject to change without notice.

VHS PAL NTSC4.43 **VIDEO CASSETTE RECORDER**

SONY®

MICROFILM

• DIFFERENT PARTS LIST

5-1. EXPLODED VIEWS

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

SERVICE MANUAL PAGE	Ref. No.	Description	SLV-E810VC	SLV-E810NP	SLV-E811VC1/VC2	SLV-E811NP
5-3	57	PANEL ASSY, FRONT	A-6780-288-A	A-6780-292-A	A-6780-419-A	A-6780-417-A
5-3, 29	78	REMOTE COMMANDER	1-473-450-11 (RMT-V187)	1-473-450-11 (RMT-V187)	1-473-450-31 (RMT-V192)	1-473-450-31 (RMT-V192)
5-3, 30	82	COVER, REMOTE CONTROL	3-709-051-01 (RMT-V187)	3-709-051-01 (RMT-V187)	3-709-051-21 (RMT-V192)	3-709-051-21 (RMT-V192)
5-30	—	* INDIVIDUAL CARTON	3-967-573-01	3-967-573-01	3-967-573-41	3-967-573-41
5-30	—	MANUAL, INSTRUCTION (FRENCH)	3-810-400-21	3-810-400-21	3-810-400-22 (EXCEPT VC2)	3-810-400-22
5-30	—	MANUAL, INSTRUCTION (GERMAN)	3-810-400-31	3-810-400-31	3-810-400-32	3-810-400-32
5-30	—	MANUAL, INSTRUCTION (DUTCH)	3-810-400-51	3-810-400-51	3-810-400-51 (EXCEPT VC2)	3-810-400-52
5-30	—	MANUAL, INSTRUCTION (ITALIAN)	3-810-400-61	3-810-400-61	3-810-400-61 (EXCEPT VC2)	—
5-30	—	MANUAL, INSTRUCTION (SPANISH)	3-810-400-71	3-810-400-71	—	3-810-400-72
5-30	—	MANUAL, INSTRUCTION (PORTUGUESE)	3-810-400-81	3-810-400-81	—	3-810-400-82
5-30	—	MANUAL, INSTRUCTION (DANISH, SWEDISH, FINNISH)	3-810-401-51	3-810-401-51	—	3-810-401-52

9-921-614-11

Sony Corporation
Home A&V Products Company

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Published by Service and safety Engineering Dept. (Osaki East)

- **Feature Difference**

SLV-E510 Series

SLV- / FEATURE	E510EE	E510VC1/ VC2
NTSC 4.43 PB	O	X
ME SECAM REC/PB	X/X	X/X
AUDIO SYSTEM	MONO	MONO
RF IN/OUT	DK/BG	BG
DUAL MODE SHUTTLE	O	O
OPERATING SWITCH BLOCK	O	O
REMOTE COMMANDER RMT-	V186C	V186C

SLV-E710 Series

SLV- / FEATURE	E710B	E710EX/UX	E710NC/NP	E710VC/VP
NTSC 4.43 PB	X	X	X	X
ME SECAM REC/PB	O/O	X/X	X/X	X/X
AUDIO SYSTEM	Hi-Fi	Hi-Fi	Hi-Fi	Hi-Fi
RF IN/OUT	L/BG	I	BG	BG
DUAL MODE SHUTTLE	O	O	O	O
OPERATING SWITCH BLOCK	X	X	X	X
REMOTE COMMANDER RMT-	V186F	V186E	V186D	V186D

SLV-E810 Series

SLV- / FEATURE	E810B	E810BZ	E810EE	E810NP	E810UX	E810VC
NTSC 4.43 PB	O	O	O	O	O	O
ME SECAM REC/PB	O/O	O/O	X/X	X/X	X/X	X/X
AUDIO SYSTEM	Hi-Fi	Hi-Fi	Hi-Fi	Hi-Fi	Hi-Fi	Hi-Fi
RF IN/OUT	L	L/BG	DK/BG	BG	I	BG
DUAL MODE SHUTTLE	O	O	O	O	O	O
OPERATING SWITCH BLOCK	O	O	O	O	O	O
REMOTE COMMANDER RMT-	V187A	V187A	V187	V187	V185A	V187

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SERVICE NOTE

1. UPPER DRUM REPLACEMENT (EXCEPT E510)

1-1. Removal of Upper Drum

1) Remove the screw ① (BV3 × 8) and take out the ground shaft assembly ②. (See Fig. 1.)
2) Completely remove the rotary upper drum board and desolder the soldering indicated by the arrows.
3) Remove two screw ③ (PSW3 × 8) and take out the rotary upper drum in the arrow direction Ⓐ. (See Fig. 2.)
   If it difficult, remove by shaking the rotary upper drum gradually.

Note: If the drum can not be removed, check whether the solders have been removed or not again.

1-2. Mounting Upper Drum

1) When inserting the rotary drum into the lower drum, be careful not to blur the contacting surface with fingerprint or the like.
2) Mount the rotary upper drum board so that the screw holes of both upper and lower drums match. (See Fig. 2.)
3) If it is difficult, mount the upper drum by shaking it gradually.
   Note: Be careful not to damage the head. Make sure that the upper drum is tightly inserted.
4) Tighten two screws ③ (PSW3 × 8). (See Fig. 2.)
   Note: Temporary tighten two screws. After making sure that upper drum is tightly inserted, tighten the screws.
5) Solder points on the board of the rotary upper drum.
6) Fix the ground shaft assembly ② using the screw ① (BV3 × 8) so that the protrusion of ground shaft assembly end contacts the center of the drum shaft.
   Note: When attaching the ground shaft assembly ②, be careful not to apply force to the spring section of it.

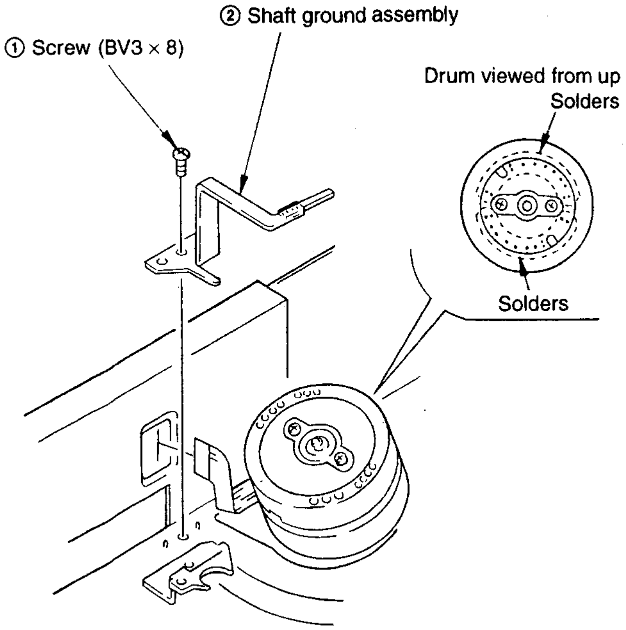


Fig. 1

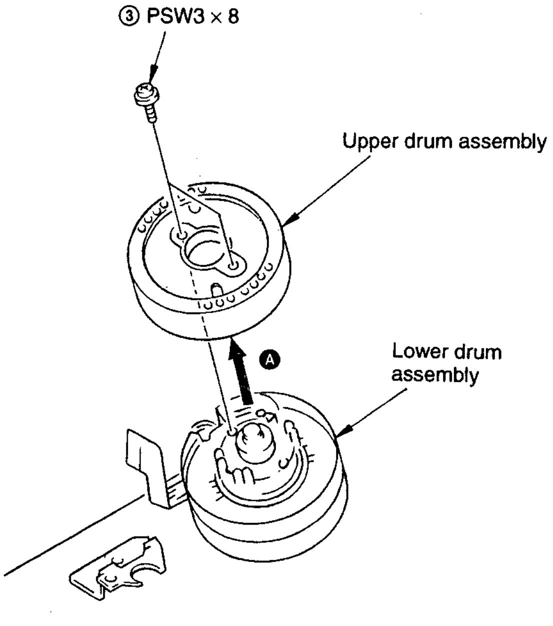


Fig. 2

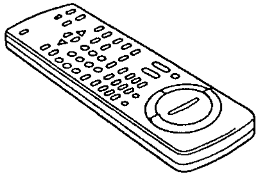
SECTION 1
GENERAL

This section is extracted from SLV-E810UX instruction manual.

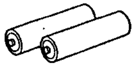
Step 1
Unpacking

Check that you have received the following items with the VCR:

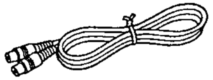
- Remote commander



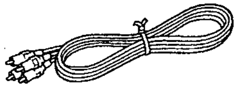
- R6 (size AA) batteries



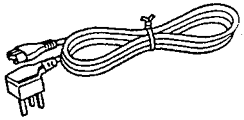
- Aerial cable



- Audio cable



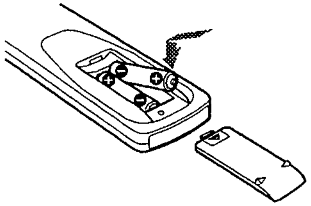
- Mains lead



Step 2
Setting up the remote commander

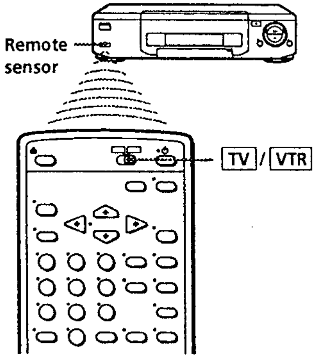
Inserting the batteries

Insert two R6 (size AA) batteries by matching the + and – on the batteries to the diagram inside the battery compartment.



Using the remote commander

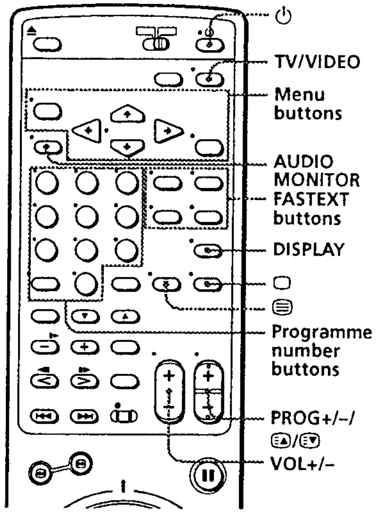
You can use this remote commander to operate this VCR and a Sony TV. Buttons on the remote commander marked with a dot (•) can be used to operate your Sony TV.



To operate	Set TV / VTR to
the VCR	VTR and point at the remote sensor on the VCR
a Sony TV	TV and point at the remote sensor on the TV

continued

Step 2 : Setting up the remote commander (continued)



1-2

TV control buttons

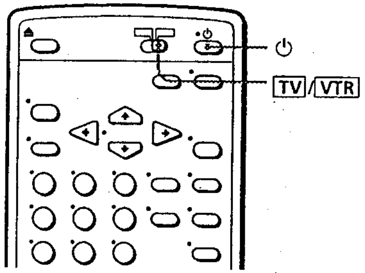
To	Press
Turn the TV into standby or active mode	⏻ (on/standby)
Select an input source of the TV either from aerial in or from line in	TV/VIDEO
Select the programme position of the TV	Programme number buttons PROG +/-
Adjust the volume of the TV	VOL +/-
Switch to TV (Teletext off)	▭ (TV)
Switch to Teletext	⊜ (Teletext)
Select the sound	AUDIO MONITOR
Use FASTEXT	FASTEXT buttons
Call up on-screen display	DISPLAY
Change the Teletext page	▲/▼
Operate TV menu options	Menu buttons

Notes

- With normal use, the batteries should last about three to six months.
- If you do not use the remote commander for an extended period of time, remove the batteries to avoid possible damage from battery leakage.
- Do not use a new battery with an old one.
- Do not use different types of batteries.

Controlling other TVs with the remote commander

The remote commander is preprogrammed to control non-Sony TVs. If your TV is listed in the table below, set the appropriate manufacturer's code number.



1 Set TV/VTR at the top of the remote commander to TV.

2 Hold down ⏻, and enter your TV's code number(s) using the number buttons. Then release ⏻.

Now you can use the following TV control buttons to control your TV: ⏻ (on/standby), TV/VIDEO, programme number buttons, PROG +/–, VOL +/–, ▭ (TV), ⊜ (Teletext), FASTEXT buttons.

Code numbers of controllable TVs

If more than one code number is listed, try entering them one at a time until you find the one that works with your TV.

Manufacturer	Code number	Manufacturer	Code number
Sony	01, 02, 03, 04, 05	Hitachi	24
Aiwa	32	Hyper	31
Akai	68	Inno-Hit	41
Blaupunkt	10, 21	Irradio	20
Brionvega	40	ITT	15, 16
C.G.M, Mivar	09	JVC	33
Dual	44	Loewe	45
Fenner	30, 31	Mitsubishi	27, 28, 50, 51
Ferguson	52	NEC	66
Grundig	10, 11	Nokia	15, 16

continued

Manufacturer	Code number
Nordmende	35, 42
Orion	47, 48
Panasonic	17, 49
Philips	06, 07, 08
Phonola	18, 19
Pioneer	26
Saba	12, 13
Samsung	22, 23
Sanyo	25
Schneider	46
Seleco	14
Sharp	29
Siemens	39
Sinudyne	37
TEAC	67
Telefunken	36
Thomson	43
Toshiba	38
White Westinghouse	34

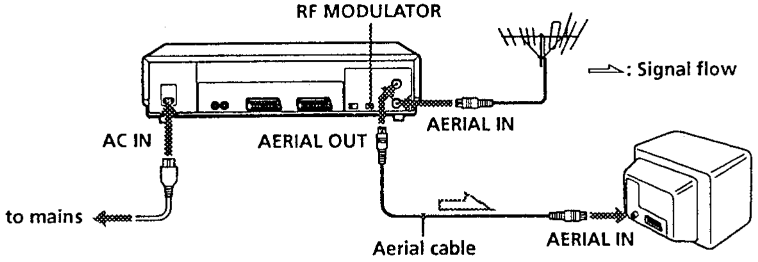
Notes

- If the TV uses a different remote control system from the one programmed to work with the VCR, you cannot control your TV with the remote commander.
- If you enter a new code number, the code number previously entered will be erased.
- When you replace the batteries of the remote commander, the code number automatically resets to 01 (Sony). Reset the appropriate code number.

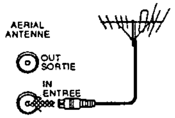
1-3

Step 3

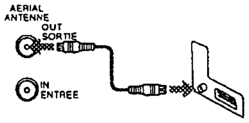
Connecting the VCR


RF MODULATOR
: Signal flow
AC IN
AERIAL OUT
AERIAL IN
to mains
Aerial cable
AERIAL IN

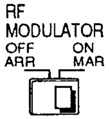
1 Disconnect the aerial cable from your TV and connect it to AERIAL IN on the rear panel of the VCR.


AERIAL
ANTENNE
OUT
SORTIE
IN
ENTREE

2 Connect AERIAL OUT of the VCR and the aerial input of your TV using the supplied aerial cable.

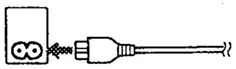

AERIAL
ANTENNE
OUT
SORTIE
IN
ENTREE

3


RF
MODULATOR
OFF
ARR
ON
MAR

Make sure RF MODULATOR is set to ON.

4 Connect AC IN of the VCR to the mains using the supplied mains lead.

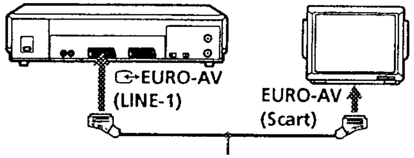


continued

Additional connections

To a TV that has a EURO-AV (Scart) connector

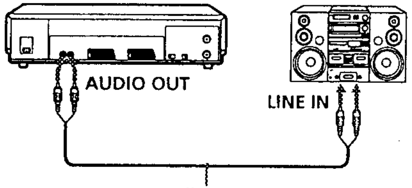
This additional connection improves picture and sound quality. Connect the TV as shown on the right. Whenever you want to watch the VCR picture, press TV/VIDEO on the remote commander (or TV/VTR on the VCR) to display the VTR indicator in the display window.



VMC-2121 EURO-AV cable (not supplied)

To a stereo system

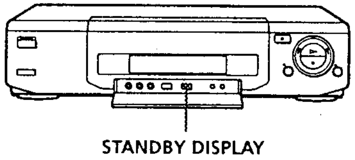
You can improve sound quality by connecting a stereo system as shown on the right.



Audio cable

To conserve the VCR power while the VCR is standing by

Set STANDBY DISPLAY to OFF. The indicators in the display window turn off to conserve the power. When you set a timer recording, the indicators in the display window are on even though STANDBY DISPLAY is set to OFF.



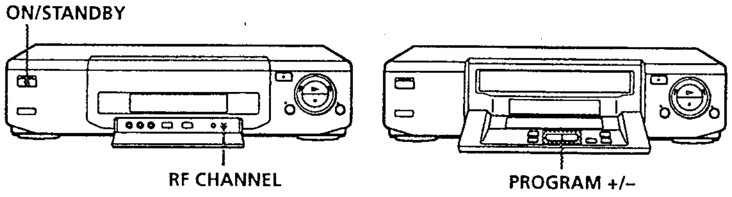
Tip

- When the TV is connected to the EURO-AV (LINE-1) connector, setting the RF MODULATOR switch to OFF is recommended. In the OFF position, only the signal from the aerial is output through the AERIAL OUT connector.

Step 4

Tuning your TV to the VCR

If you have connected your VCR to the TV using the EURO-AV cable, skip this step.



1 ON/STANDBY

Press ON/STANDBY to turn on the VCR.

2 RF CHANNEL

Press RF CHANNEL on the VCR.

The factory-preset RF channel appears in the display window.

The VCR signal is output through this channel to the TV.

3

Turn on your TV and select a programme position for the VCR picture.

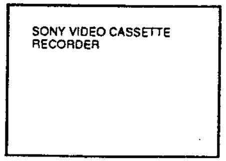
This channel will now be referred to as the video channel.

4

Tune the TV to the same channel as that shown in the display window so that the picture on the right appears on the TV screen.

Refer to your TV manual for tuning instructions.

If the picture does not appear clearly, see "To obtain a clear picture from the VCR" on the next page.



continued

5

Press RF CHANNEL.

You have now tuned your TV to the VCR. From now on, whenever you want to play a tape, set the TV to the video channel.

To check to see if the TV tuning is correct

Set the TV to the video channel and press PROGRAM +/– on the VCR. If the TV screen changes to a different programme each time you press PROGRAM +/–, the TV tuning is correct.

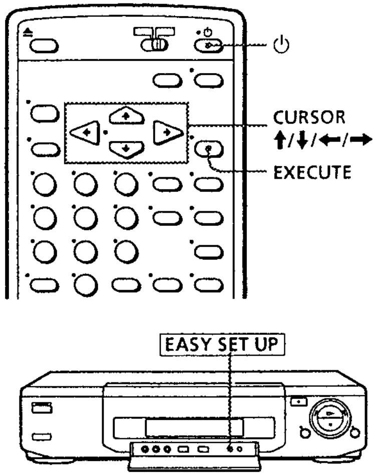
To obtain a clear picture from the VCR

If the picture does not appear clearly in step 4 above, press PROGRAM +/– in step 4, so that another RF channel appears. Then tune the TV to the new RF channel until a clear picture appears.

Step 5

Setting up the VCR with EASY SET UP

Before using the VCR for the first time, set up the VCR using the EASY SET UP function. With this function, you can set the language for the on-screen display, TV channels, guide channels for VIDEO Plus+, and the VCR clock, guided by the sequence indicated on the TV screen.



1

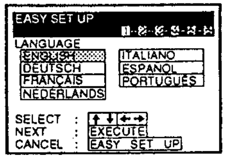
Press ⏻ to turn on the VCR.

2 Turn on your TV and set it to the video channel.

3

Press EASY SET UP on the VCR.

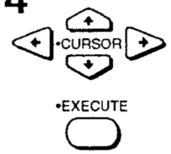
To cancel the EASY SET UP function, press EASY SET UP again.



EASY SET UP 1-2-3-4-5-6
LANGUAGE
ENGLISH | ITALIANO
DEUTSCH | ESPANOL
FRANÇAIS | PORTUGUES
NEDERLANDS

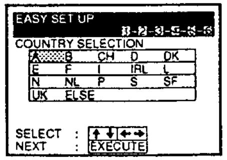
SELECT : ↑ ↓ ← →
NEXT : EXECUTE
CANCEL : EASY SET UP

4



Press CURSOR ↑/↓/←/→ to highlight the desired language, then press EXECUTE.

The country abbreviations for ITP (Intelligent Tuner Preset) appear.

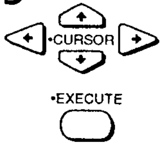


EASY SET UP 1-2-3-4-5-6
COUNTRY SELECTION
A B CH D DK
E F I IRL L
N NL P S SF
UK ELSE

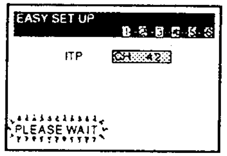
SELECT : ↑ ↓ ← →
NEXT : EXECUTE

continued

5



Press CURSOR ↑/↓/←/→ to highlight the abbreviation of your country, then press EXECUTE.



```
EASY SET UP
                1-2-3-4-5-6
      ITP     CH  42
PLEASE WAIT
```

The abbreviations of the countries are as follows:

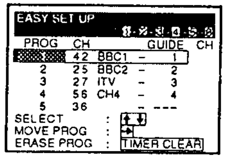
A: Austria
B: Belgium
CH: Switzerland
D: Germany
DK: Denmark
E: Spain
F: France
I: Italy
IRL: Ireland
L: Luxemburg
N: Norway
NL: Netherlands
P: Portugal
S: Sweden
SF: Finland
UK: United Kingdom
ELSE: other countries

If your country does not appear, select ELSE.

When you press EXECUTE, ITP starts searching for all the receivable channels.

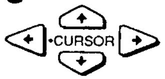
ITP sorts the located channels appropriately for the selected country and presets them to the programme positions. Some VIDEO Plus+ guide channels and station names may also be preset if ITP can detect them.

During presetting, the channel being located is displayed on the TV screen. When all the channels are preset, the following screen appears.



```
EASY SET UP
                 1-2-3-4-5-6
 PROG  CH        GUIDE  CH
       42  BBC1  -     1
   2   25  BBC2  -     2
   3   27  ITV   -     3
   4   56  CH4   -     4
   5   36        -  ---
SELECT      : ↑↓
MOVE PROG   : →
ERASE PROG  : TIMER CLEAR
```

6



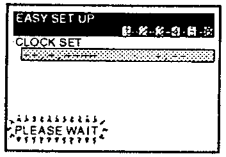
Using CURSOR ↑/↓/←/→, set the station names and VIDEO Plus+ guide channels that could not be preset automatically, change the programme positions of the stations, and disable the unused programme positions. (If not necessary, skip this step.)

The setting procedures are the same as those described in "Manual setup — Selecting station names/setting up VIDEO Plus+" on page 20 and "Manual setup — Changing/disabling programme positions" on page 25.

7

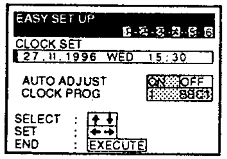
Press EXECUTE.

Auto Clock Set starts searching for a TV station that carries the time signal and sets the clock time automatically. The date is also set if the date data is transmitted from the TV station.



```
EASY SET UP
                 1-2-3-4-5-6
CLOCK SET

PLEASE WAIT
```

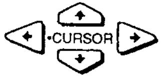
When the clock setting is completed, the following screen appears.



```
EASY SET UP
                 1-2-3-4-5-6
CLOCK SET
 27.11.1996  WED  15:30

 AUTO ADJUST       ON  OFF
 CLOCK PROG        1  BBC1

SELECT  : ↑↓
SET     : ←→
END     : EXECUTE
```

If the VCR does not receive the time signal from any station, "1.1. 1996 MON 0:00" appears and AUTO ADJUST is set to OFF.

8



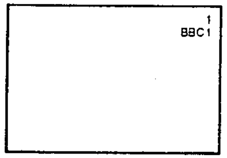
If necessary, adjust the date and/or time manually or change the station for Auto Clock Set using CURSOR ↑/↓/←/→.

The setting procedures are the same as those described in "Manual setup — Setting the clock" on page 28.

9

Press EXECUTE .

A programme position appears on the TV screen. The station name may also appear if the VCR has detected it.

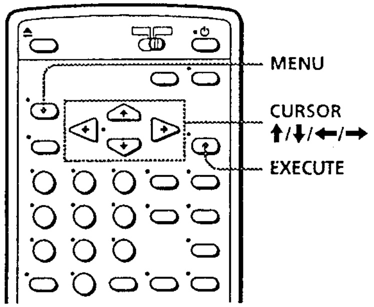


```
                                   1
                                BBC1
```

Note

- Do not exit EASY SET UP while ITP is presetting channels. If you do, repeat EASY SET UP from the beginning.

Manual setup — Selecting a language

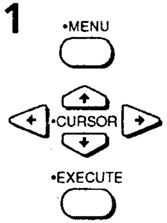


You can change the on-screen display language from the one you selected with EASY SET UP.

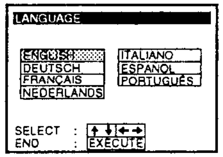
Before you start...

- Turn on the VCR and the TV.
- Set the TV to the video channel.

1



Press MENU, then press CURSOR ↑/↓ to move the cursor (I) to LANGUAGE and press EXECUTE.

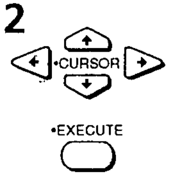


LANGUAGE

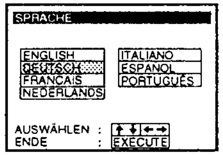
ENGLISH
DEUTSCH
FRANÇAIS
NEDERLANDS
ITALIANO
ESPANOL
PORTUGUÊS

SELECT : ↑ ↓ ← →
END : EXECUTE

2



Press CURSOR ↑/↓/←/→ to highlight the desired language, then press EXECUTE.

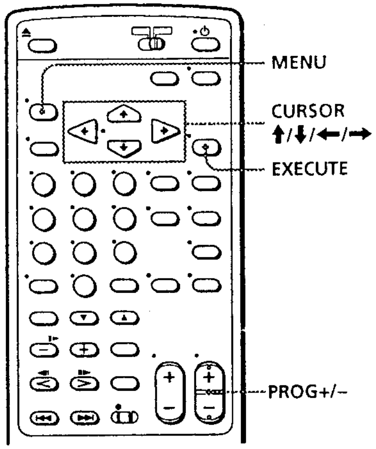


SPRACHE

ENGLISH
DEUTSCH
FRANCAIS
NEDERLANDS
ITALIANO
ESPANOL
PORTUGUÊS

AUSWÄHLEN : ↑ ↓ ← →
ENDE : EXECUTE

Manual setup — Presetting channels

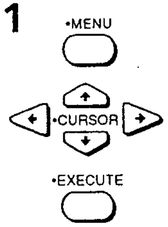


If some channels could not be preset using EASY SET UP, you can preset them manually.

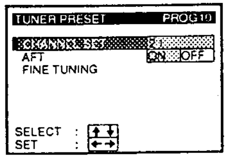
Before you start...

- Turn on the VCR and the TV.
- Set the TV to the video channel.

1



Press MENU, then press CURSOR ↑/↓ to move the cursor (I) to TUNER PRESET and press EXECUTE.

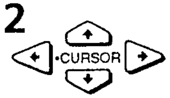


TUNER PRESET PROG10

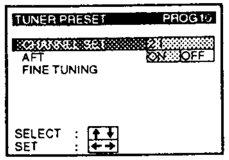
CHANNEL SET 21
AFT ON OFF
FINE TUNING

SELECT : ↑ ↓
SET : ← →

2



Press CURSOR ↑/↓ to move the cursor (I) to CHANNEL SET.



TUNER PRESET PROG10

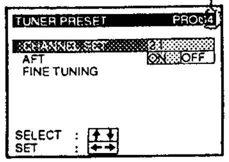
CHANNEL SET 21
AFT ON OFF
FINE TUNING

SELECT : ↑ ↓
SET : ← →

3

Press PROG +/– to select the programme position.

Selected programme position



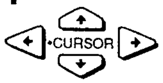
TUNER PRESET PROG4

CHANNEL SET 21
AFT ON OFF
FINE TUNING

SELECT : ↑ ↓
SET : ← →

continued

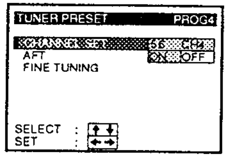
4



Press CURSOR ➡ to start tuning.

The VCR starts searching for a channel and displays the first one it finds on the TV screen. Press CURSOR ⬅/➡ repeatedly until the channel you want is displayed.

The channels are scanned from VHF E21 to E69.


TUNER PRESET
PROG4
CHANNEL SET
56 CH4
AFT
ON OFF
FINE TUNING
SELECT : ⬆ ⬇
SET : ⬅ ➡

If you know the number of the channel you want, press the programme number buttons. For example, for channel 43, first press "4" and then press "3."

5

To allocate another channel to another programme position, repeat steps 3 and 4.

6

Press EXECUTE.

Disabling unwanted programme positions

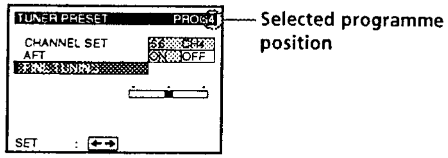
After tuning the TV channels, you can disable unused programme positions. The disabled positions will be skipped later when you press the PROG +/– buttons. You can also disable unwanted programme positions using the SET UP CH & VIDEO Plus+ menu (page 27).

1. In step 4 above, press programme number button "0" twice to display the number "0" beside CHANNEL SET.
2. Press EXECUTE.

If the picture is not clear

Normally, the Auto Fine Tuning (AFT) function automatically tunes in channels clearly. If, however, the picture is not clear, you may also use the manual tuning function.

1. Press PROG +/– to select the programme number for which you cannot obtain a clear picture.
2. Press MENU, then select TUNER PRESET and press EXECUTE.
3. Select FINE TUNING. The fine tuning meter appears.


TUNER PRESET
PROG4
CHANNEL SET
56 CH4
AFT
ON OFF
FINE TUNING
SET : ⬅ ➡
Selected programme position

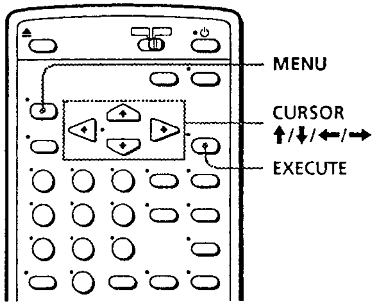
4. Press CURSOR ⬅/➡ to get a clearer picture, then press EXECUTE.

   Note that the AFT (Auto Fine Tuning) setting switches to OFF.

Note

- The menu disappears automatically if you don't proceed for more than a few minutes.

Manual setup — Selecting station names/setting up VIDEO Plus+



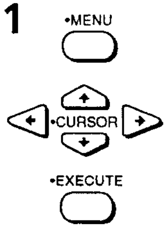
VIDEO Plus+ is a feature in Sony VCRs that simplifies programming the VCR to make timer recordings. To use VIDEO Plus+, each programme position needs to be matched with its VIDEO Plus+ guide channel. If the guide channels were not preset in the EASY SET UP procedure, set them by selecting the station names. If you cannot find a station name you want, you need to set the guide channel manually. To get the guide channel numbers, see "Guide channels for VIDEO Plus+" on page 23, or look in the programme guide for your area that features PlusCode.

- If you want to record satellite broadcasts using VIDEO Plus+, see page 24.

Before you start...

- Turn on the VCR and the TV.
- Set the TV to the video channel.

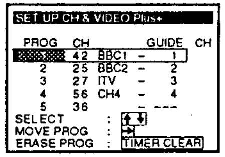
1



Press MENU, then press CURSOR ↑/↓ to move the cursor (▌) to SET UP CH & VIDEO Plus+ and press EXECUTE.

When using the EASY SET UP procedure, skip this step.

The preset channels are displayed on the screen. The station names and guide channels also appear if the VCR detected them in EASY SET UP. "---" in the GUIDE CH column means that the guide channel has not been preset.

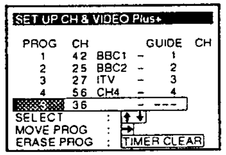


```
SET UP CH & VIDEO Plus+

PROG   CH          GUIDE   CH
  1    42  BBC1  -    1
  2    25  BBC2  -    2
  3    27  ITV   -    3
  4    56  CH4   -    4
  5    36        -  ---
SELECT      :  ↑↓
MOVE PROG   :  →
ERASE PROG  :  TIMER CLEAR
```

2

Press CURSOR ↑/↓ to move the cursor (▌) to the row on which you want to set the station name and guide channel.

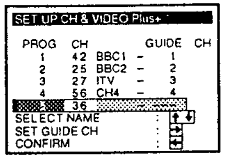
To display other pages for programme positions 6 to 60, press CURSOR ↑/↓ repeatedly.



```
SET UP CH & VIDEO Plus+

PROG   CH          GUIDE   CH
  1    42  BBC1  -    1
  2    25  BBC2  -    2
  3    27  ITV   -    3
  4    56  CH4   -    4
  5    36        -  ---
SELECT      :  ↑↓
MOVE PROG   :  →
ERASE PROG  :  TIMER CLEAR
```

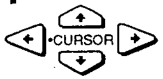
3

Press CURSOR → twice to highlight the station name and guide channel columns only.



```
SET UP CH & VIDEO Plus+

PROG   CH          GUIDE   CH
  1    42  BBC1  -    1
  2    25  BBC2  -    2
  3    27  ITV   -    3
  4    56  CH4   -    4
  5    36        -  ---
SELECT NAME    :  ↑↓
SET GUIDE CH   :  →
CONFIRM        :  ←
```

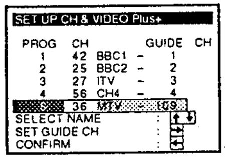
4



Press CURSOR ↑/↓ to select the station name.

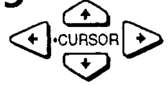
The corresponding guide channel number is set automatically.

- If you can set the station name and guide channel this way, press CURSOR ← to confirm the setting and skip steps 5 to 7.
- If you cannot find the station name you want to set, go on to the next step.

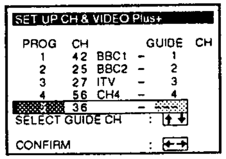


```
SET UP CH & VIDEO Plus+

PROG   CH          GUIDE   CH
  1    42  BBC1  -    1
  2    25  BBC2  -    2
  3    27  ITV   -    3
  4    56  CH4   -    4
  5    36  MTV   -  109
SELECT NAME    :  ↑↓
SET GUIDE CH   :  →
CONFIRM        :  ←
```

5

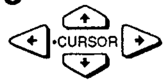


Press CURSOR → to highlight the guide channel column only.

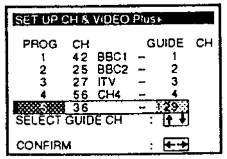


```
SET UP CH & VIDEO Plus+

PROG   CH          GUIDE   CH
  1    42  BBC1  -    1
  2    25  BBC2  -    2
  3    27  ITV   -    3
  4    56  CH4   -    4
  5    36        -  ---
SELECT GUIDE CH   :  ↑↓

CONFIRM           :  ←→
```

6



Press CURSOR ↑/↓ to select the guide channel number assigned in the programme guide.

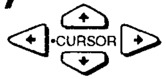


```
SET UP CH & VIDEO Plus+

PROG   CH          GUIDE   CH
  1    42  BBC1  -    1
  2    25  BBC2  -    2
  3    27  ITV   -    3
  4    56  CH4   -    4
  5    36        -  129
SELECT GUIDE CH   :  ↑↓

CONFIRM           :  ←→
```

continued

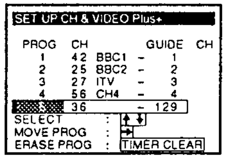
Manual setup — Selecting station names/setting up VIDEO Plus+ (continued)

7



Press CURSOR ←/→ to confirm the setting.

The cursor (I) appears in the leftmost column.



```
SET UP CH & VIDEO Plus+

 PROG   CH            GUIDE  CH
   1    42  BBC1  -     1
   2    25  BBC2  -     2
   3    27  ITV   -     3
   4    56  CH4   -     4
   5    36        -   129
 SELECT       : ↑ ↓
 MOVE PROG    : →
 ERASE PROG   : TIMER CLEAR
```

8

To set the station name and guide channel of another station, repeat steps 2 to 7.

If you want to change the programme positions of the stations, proceed to step 2 of "Manual setup — Changing/disabling programme positions" on page 25.

9

Press EXECUTE.

Guide channels for VIDEO Plus+

Guide channel	Station name
001	BBC1
002	BBC2
003	ITV
004	CHANNEL 4
005	RTE (IRELAND)
006	NETWORK 2 (IRELAND)
101	SKY ONE
102	SKY NEWS
103	SKY MOVIES
104	THE MOVIE CHANNEL
105	SKY SPORT
106	NICKELODEON VH-1 GERMANY
107	EUROSPORT
108	GALAVISION
109	MTV EUROPE
110	CHILDERN'S CHANNEL THE FAMILY CHANNEL
111	SKY MOVIES GOLD
112	BBC WORLD SERVICE
113	RTL 4
114	SUPER SPORT FILMNET 2 FILMNET +
115	RTL PLUS INTERNATIONAL
116	SAT 1
117	PREMIERE
118	3 SAT
119	ARD
120	PRO 7
121	TELE 5

Guide channel	Station name
122	TELECLUB
123	UK GOLD
124	DISCOVERY THE LEARNING CHANNEL
125	BRAVO ADULT CHANNEL
126	CNN
127	EURONEWS
129	QVC
130	UK LIVING
131	RAI 1
132	RAI 2
133	TV5 EUROPE
134	TVE INTERNATIONAL
135	MBC/ARABIC
136	VTM
137	SPORTNET
138	COUNTRY MUSIC TV
139	VIDEO HITS ONE VH-1
140	SKY SPORT 2 & SOAPS & TRAVEL
141	TV ASIA
142	LA-5
143	LIVE TV
144	SUPERCHANNEL
145	JAPAN TV
146	SELECT TV TV ASIA
147	MOVIE CHANNEL FILMNET 1
149	TNT CARTOON NETWORK

Note

- The guide channel codes listed above are as of 11 September 1995. If you have any questions about the guide channels, please consult your nearest Sony service facility or the marketing group of Sony UK.

continued

Manual setup — Selecting station names/setting up VIDEO Plus+ (continued)

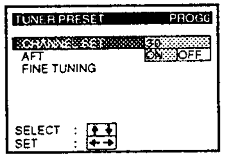
Setting up VIDEO Plus+ for satellite broadcasts

When your satellite tuner is connected via the AERIAL IN connector, first you have to set the programme position for each satellite channel using the TUNER PRESET menu. Then set the guide channel number for each satellite channel using the SET UP CH & VIDEO Plus+ menu.

If your satellite tuner is connected via the LINE-3 IN EURO-AV (Scart) connector, you don't have to set programme positions nor guide channel numbers for satellite channels. Skip the following operations.

1. Turn on the satellite tuner.
2. Press MENU, then select TUNER PRESET and press EXECUTE.
3. Press PROG +/– to select a programme position you want to use for watching a satellite channel.
4. Select CHANNEL SET, then press CURSOR ➡ to tune the VCR to the satellite tuner.

   The channel number displayed beside CHANNEL SET is used for receiving all satellite broadcasts from the satellite tuner.



```
TUNER PRESET                PROGG

CHANNEL SET            30
  AFT                  ON  OFF
  FINE TUNING

SELECT   :  ⬆⬇
SET      :  ⬅➡
```

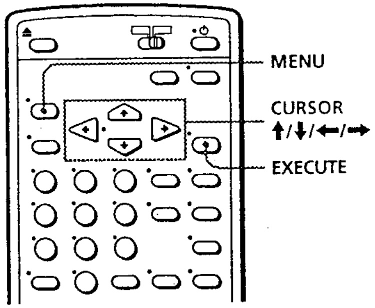
5. Press PROG +/– to select another programme position for another satellite channel, and press the programme number buttons to enter the same channel number as the one displayed in step 4.

   Repeat this step for all satellite channels.
6. Set the guide channel number for each programme position assigned to the satellite channel, following the procedures in "Manual setup — Selecting station names/setting up VIDEO Plus+" on page 20.

Notes

- The menu disappears automatically if you don't proceed for more than a few minutes.
- If you use a satellite tuner connected via the LINE-3 IN EURO-AV (Scart) connector, you don't have to set up VIDEO Plus+. Just record a satellite programme using VIDEO Plus+, and the VCR automatically records the programme from the LINE-3 IN connector.
- If you inadvertently entered a guide channel number, press CURSOR ⬆/⬇ repeatedly to reset the "GUIDE CH" column to "---." "---" appears between 1 and 255.
- The VCR does not allow entering the guide channel number, if the same number has been set.
- When you record a satellite broadcast using VIDEO Plus+, you need to select the desired channel on the satellite tuner manually.

Manual setup — Changing/ disabling programme positions



After setting the channels and VIDEO Plus+ guide channels, you can change the programme positions as you like. If any programme positions are unused or contain unwanted channels, you can disable them.

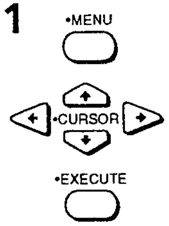
Before you start...

- Turn on the VCR and the TV.
- Set the TV to the video channel.

Changing programme positions

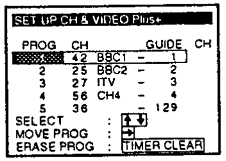
e.g. Moving the programme position from 3 to 1.

1



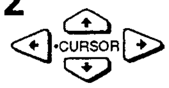
Press MENU, then press CURSOR ⬆/⬇ to move the cursor (▮) to SET UP CH & VIDEO Plus+ and press EXECUTE.

When using the EASY SET UP procedure, skip this step.



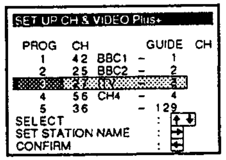
```
SET UP CH & VIDEO Plus+

PROG   CH           GUIDE  CH
 1     42  BBC1  -      1
 2     25  BBC2  -      2
 3     27  ITV   -      3
 4     56  CH4   -      4
 5     36        -    129
SELECT        :  ⬆⬇
MOVE PROG     :  ➡
ERASE PROG    :  TIMER CLEAR
```

2



Press CURSOR ⬆/⬇ to move the cursor (▮) to the row on which you want to change the programme position, then press CURSOR ➡.

To display other pages for programme positions 6 to 60, press CURSOR ⬆/⬇ repeatedly.



```
SET UP CH & VIDEO Plus+

PROG   CH           GUIDE  CH
 1     42  BBC1  -      1
 2     25  BBC2  -      2
 3     27  ITV   -      3
 4     56  CH4   -      4
 5     36        -    129
SELECT              :  ⬆⬇
SET STATION NAME    :  ➡
CONFIRM             :  ⬅
```

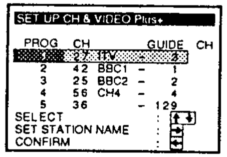
continued

Manual setup — Changing/disabling programme positions (continued)

3 •CURSOR

Press CURSOR ↑/↓ until the selected channel and guide channel row moves to the desired programme position.

The selected channel and guide channel are inserted at the new programme position and the intermediate channels are displaced to fill the gap.



```
SET UP CH & VIDEO Plus+

 PROG   CH          GUIDE  CH
   1    27  ITV    -    3
   2    42  BBC1   -    1
   3    25  BBC2   -    2
   4    56  CH4    -    4
   5    36         -  129
SELECT               : ↑↓
SET STATION NAME     : →
CONFIRM              : ←
```

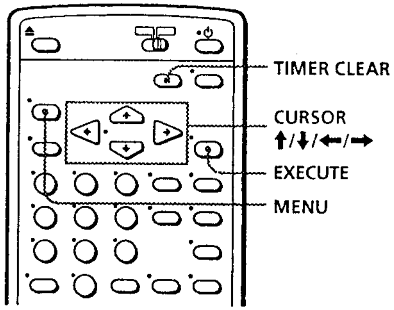
4 Press CURSOR ← to confirm the setting.

5 To change the programme position of another station, repeat steps 2 to 4.

6 •EXECUTE

Press EXECUTE.

Disabling unwanted programme positions



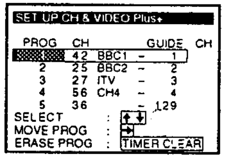
Note

- Be sure to select the programme position you want to disable correctly. If you disable a programme position by mistake, you need to reset that channel manually.

1 •MENU •CURSOR •EXECUTE

Press MENU, then press CURSOR ↑/↓ to move the cursor (I) to SET UP CH & VIDEO PLUS+ and press EXECUTE.

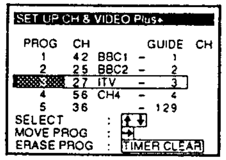
When using the EASY SET UP procedure, skip this step.



```
SET UP CH & VIDEO Plus+

 PROG   CH          GUIDE  CH
   1    42  BBC1   -    1
   2    25  BBC2   -    2
   3    27  ITV    -    3
   4    56  CH4    -    4
   5    36         -  129
SELECT          : ↑↓
MOVE PROG       : →
ERASE PROG      : TIMER CLEAR
```

2 •CURSOR

Press CURSOR ↑/↓ to move the cursor (I) to the row on which you want to disable.

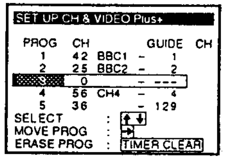


```
SET UP CH & VIDEO Plus+

 PROG   CH          GUIDE  CH
   1    42  BBC1   -    1
   2    25  BBC2   -    2
   3    27  ITV    -    3
   4    56  CH4    -    4
   5    36         -  129
SELECT          : ↑↓
MOVE PROG       : →
ERASE PROG      : TIMER CLEAR
```

3 TIMER CLEAR

Press TIMER CLEAR.

The selected row will be cleared as shown on the right.



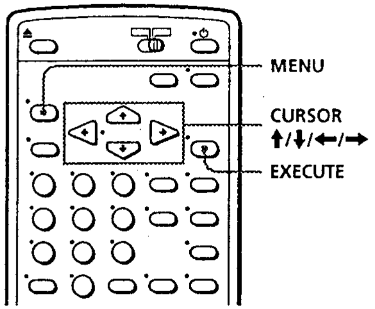
```
SET UP CH & VIDEO Plus+

 PROG   CH          GUIDE  CH
   1    42  BBC1   -    1
   2    25  BBC2   -    2
   3     0         -  ---
   4    56  CH4    -    4
   5    36         -  129
SELECT          : ↑↓
MOVE PROG       : →
ERASE PROG      : TIMER CLEAR
```

4 Repeat steps 2 and 3 for any other programme positions you want to disable.

5 •EXECUTE

Press EXECUTE.

Manual setup — Setting the clock



You must set the time and date on the VCR to be able to use the timer recording features properly. If the VCR clock was not set in the EASY SET UP procedure, you need to set it manually.

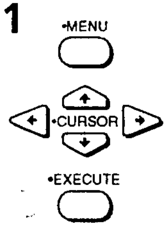
If the Auto Clock Set did not set the clock correctly for your local area, try another station for Auto Clock Set.

Before you start...

- Turn on the VCR and the TV.
- Set the TV to the video channel.

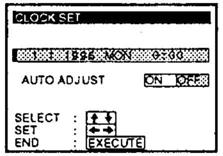
Setting the clock manually

1



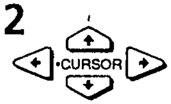
Press MENU, then press CURSOR ↑/↓ to move the cursor (I) to CLOCK SET and press EXECUTE.

When using the EASY SET UP procedure, skip this step.

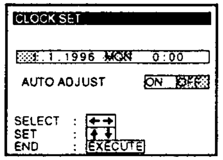


CLOCK SET
1. 1.1996 MON 0:00
AUTO ADJUST ON OFF
SELECT : ↑↓
SET : ←→
END : EXECUTE

2

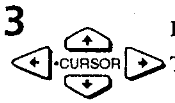


Press CURSOR → to highlight the day and the day of the week.



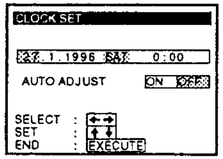
CLOCK SET
1. 1.1996 MON 0:00
AUTO ADJUST ON OFF
SELECT : ←→
SET : ↑↓
END : EXECUTE

3



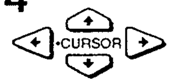
Press CURSOR ↑/↓ to set the day.

The day of the week is set automatically.

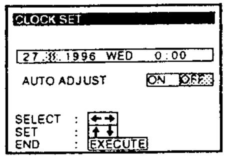


CLOCK SET
27. 1.1996 SAT 0:00
AUTO ADJUST ON OFF
SELECT : ←→
SET : ↑↓
END : EXECUTE

4

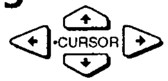


Press CURSOR → to highlight the month and set the month using CURSOR ↑/↓.

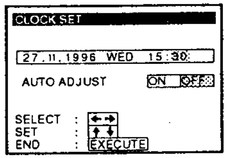


CLOCK SET
27.11.1996 WED 0:00
AUTO ADJUST ON OFF
SELECT : ←→
SET : ↑↓
END : EXECUTE

5

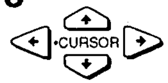


Set the year, hour and minutes in sequence, using CURSOR → to highlight the item to be set, and CURSOR ↑/↓ to select the digits.



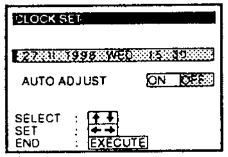
CLOCK SET
27.11.1996 WED 15:30
AUTO ADJUST ON OFF
SELECT : ←→
SET : ↑↓
END : EXECUTE

6



Press CURSOR → to confirm the setting.

The cursor (I) appears in the leftmost column.



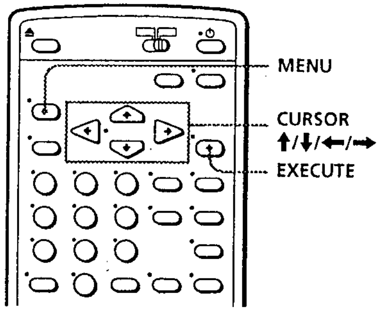
CLOCK SET
27.11.1996 WED 15:30
AUTO ADJUST ON OFF
SELECT : ↑↓
SET : ←→
END : EXECUTE

7

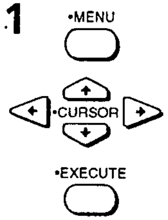
Press EXECUTE to start the clock.

continued

Changing the station for Auto Clock set

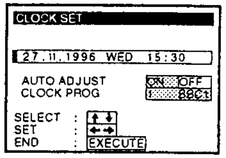


1



Press MENU, then press CURSOR ↑/↓ to move the cursor (▌) to CLOCK SET and press EXECUTE.

When using the EASY SET UP procedure, skip this step.



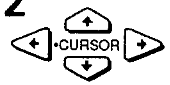
CLOCK SET

27.11.1996 WED 15:30

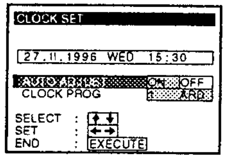
AUTO ADJUST ON OFF
CLOCK PROG 1 BBC1

SELECT : ↑↓
SET : ←→
END : EXECUTE

2



Press CURSOR ↓ to move the cursor (▌) to AUTO ADJUST, then press CURSOR ← to highlight ON.



CLOCK SET

27.11.1996 WED 15:30

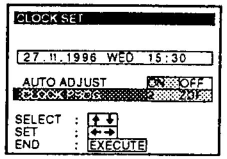
AUTO ADJUST ON OFF
CLOCK PROG 1 ARD

SELECT : ↑↓
SET : ←→
END : EXECUTE

3

Press CURSOR ↓ to move the cursor (▌) to CLOCK PROG, then press CURSOR ←/→ repeatedly until the programme position of the station that carries the time signal appears.

If the VCR does not receive the time signal from any station, AUTO ADJUST returns to OFF automatically.



CLOCK SET

27.11.1996 WED 15:30

AUTO ADJUST ON OFF
CLOCK PROG 2 ZDF

SELECT : ↑↓
SET : ←→
END : EXECUTE

4

Press EXECUTE.

Tips

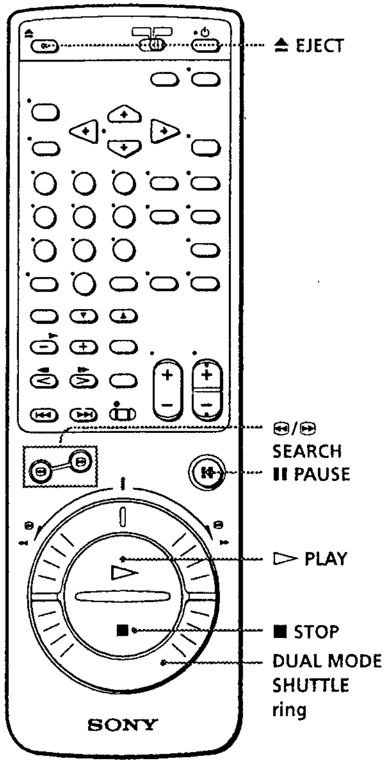
- To change the digits during setting, press CURSOR ← to return to the item to be changed, and select the digits using CURSOR ↑/↓.
- If you set AUTO ADJUST to ON, the Auto Clock Set is activated whenever the VCR is turned off. The date and time is adjusted automatically by making reference to the time signal from the station whose programme position is displayed in the "CLOCK PROG" row.

  If you do not need the Auto Clock Set, highlight OFF.

Note

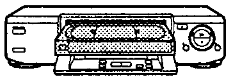
- The menu disappears automatically if you don't proceed for more than a few minutes.

Playing a tape



1 Turn on your TV and set it to the video channel.

2 The VCR turns on and starts playing automatically if you insert a tape with its safety tab removed.



3

Press ▷ PLAY.

When the tape reaches the end, it will rewind automatically.

Additional tasks

To	Press
Stop play	■ STOP
Pause play	II PAUSE
Resume play after pause	II PAUSE or ▷ PLAY
Search forward	• Turn the DUAL MODE SHUTTLE (DMS) ring to ⏩ during playback • ⏩ SEARCH during playback
Search backward	• Turn the DMS ring to ⏪ during playback • ⏪ SEARCH during playback
Fast-forward the tape	Turn the DMS ring to ►► FF during stop
Rewind the tape	Turn the DMS ring to ◄◄ REW during stop
Eject the tape	≜ EJECT

To play an NTSC-recorded tape

Set NTSC PB at the rear of the VCR according to the colour system of your TV.

When your TV is	Set NTSC PB to
PAL only	ON PAL TV
PAL and NTSC	NTSC 4.43

To use the time counter

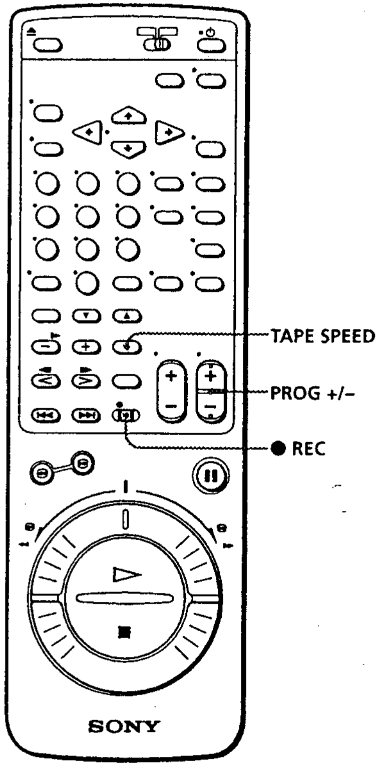
At the point the tape that you want to find later, press COUNTER RESET. The counter in the display window resets to "0H00M00S." Search for the point afterwards by referring to the counter.

To display the counter on the TV screen, press DISPLAY.

Notes

- Depending on your TV, the following may occur while playing an NTSC-recorded tape:
  - The picture becomes black and white.
  - The picture shakes.
  - No picture appears on the TV screen.
  - Black streaks appear horizontally on the TV screen.
  - The colour density increases or decreases.
- If you play back a tape in LP or EP mode with NTSC system, the sound is heard in monaural.
- The counter resets to "0H00M00S" whenever a tape is reinserted.
- The counter stops counting when it comes to a portion with no recording.

Recording TV programmes



1 Turn on your TV and set it to the video channel.

2 Open the drop down panel and insert a tape with its safety tab in place.

3

Press PROG +/– to select the programme position you want to record.

4 TAPE SPEED Press TAPE SPEED to select the tape speed, SP or LP.

LP provides recording time twice as long as SP, however, SP produces better picture and audio quality.

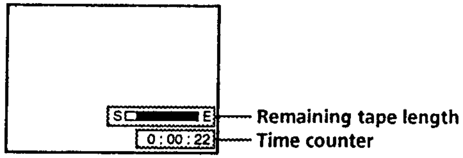
5 ●REC Press ● REC to start recording.

To stop recording

Press ■ STOP.

To check the remaining tape length

Press DISPLAY. The white bar indicates the approximate length of tape remaining.

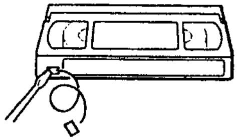


To watch another TV programme while recording

1. Press TV/VIDEO on the remote commander (or TV/VTR on the VCR) to turn off the VTR indicator in the display window.
2. Select another programme position on the TV.

To save a recording

To prevent accidental erasure, break off the safety tab as illustrated. To record on a tape again, cover the tab hole with adhesive tape.



Safety tab

continued

Recording TV programmes (continued)

Tips

- To select a programme position, you can use the programme number buttons on the remote commander. For two-digit numbers, press the -/-- (ten's digit) button followed by the programme number buttons.
- You can select a video source from the EURO-AV (LINE -1) or EURO-AV (LINE-3) connector, or the LINE-2 IN VIDEO/AUDIO L/R jacks using INPUT SELECT.
- To cut out an unwanted scene while recording, press ❚❚ PAUSE and turn the DUAL MODE SHUTTLE ring on the VCR to rewind the tape to the beginning of the unwanted scene, then press ❚❚ PAUSE to resume recording.
- The display appears on the TV screen indicating information about the tape, but the information won't be recorded on the tape.
- If you don't want to watch TV while recording, you can turn off the TV.

Notes

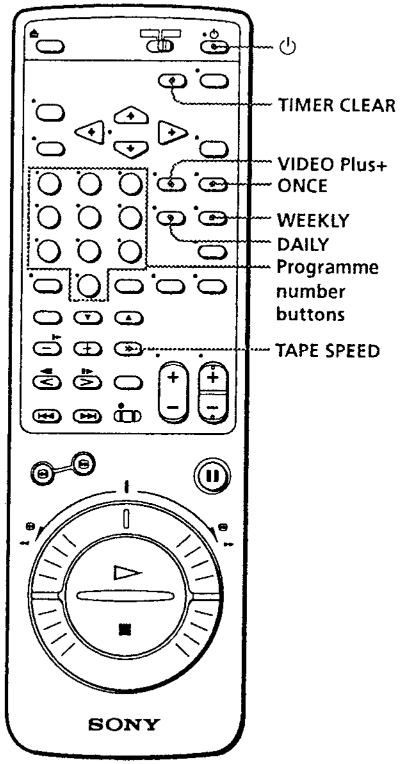
- The display does not appear during still (pause) mode or slow-motion playback.
- The display will not appear while playing an NTSC-recorded tape.
- If a tape has portions recorded in both PAL and NTSC systems, the time counter reading will not be correct. This discrepancy is due to the difference between the counting cycles of the two video systems.

Recording TV programmes using VIDEO Plus+

Just enter the programme's "PlusCode" listed in the TV programme guide. The date, times and programme position of that programme are set automatically. You can preset up to eight programmes at a time.

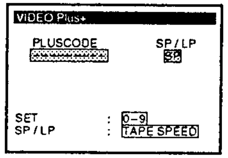
Before you start...

- Check that the VCR clock is set to the correct time.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.
- Turn on your TV and set it to the video channel.



1 VIDEO Plus+

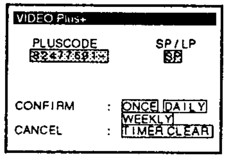
Press VIDEO Plus+.


VIDEO Plus+
PLUSCODE SP/LP
SP
SET : 0–9
SP/LP : TAPE SPEED

2 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⓪

Press the programme number buttons to enter the programme's PlusCode.

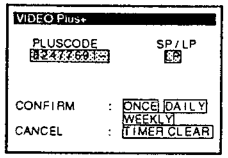
If you make a mistake, press TIMER CLEAR and re-enter the correct number.


VIDEO Plus+
PLUSCODE SP/LP
82477691 SP
CONFIRM : ONCE DAILY WEEKLY
CANCEL : TIMER CLEAR

Recording TV programmes using VIDEO Plus+ (continued)

3 TAPE SPEED

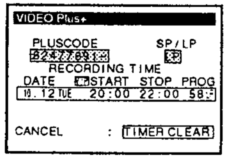
Press TAPE SPEED to select SP or LP.


VIDEO Plus+
PLUSCODE SP/LP
82477691 LP
CONFIRM : ONCE DAILY WEEKLY
CANCEL : TIMER CLEAR

4 ONCE or DAILY or WEEKLY

Press ONCE, DAILY or WEEKLY:

To record	Press
Only once	ONCE
Everyday Monday to Friday	DAILY
Once a week	WEEKLY


VIDEO Plus+
PLUSCODE SP/LP
82477691 LP
RECORDING TIME
DATE START STOP PROG
10. 12 TUE 20:00 22:00 58
CANCEL : TIMER CLEAR

The date, start and stop times, programme position, and tape speed appear on the TV screen.

If you want to turn on the PDC function, see page 47 and change the TIMER SET/CHECK menu.

For details of the PDC function, see "Timer recording with PDC signals" on page 43.

If the information is not correct, press TIMER CLEAR to cancel the setting.

5 To enter another setting, repeat steps 1 to 4.

6 ⏻

Press ⏻ to turn off the VCR.

The TIMER indicator appears in the display window and the VCR stands by for recording.

To stop recording

To stop the VCR while recording, press ■ STOP.

To record satellite broadcasts

If you connect the satellite tuner and the VCR, you can record satellite programmes.

1. Turn on the satellite tuner.
2. On the satellite tuner, select the satellite programme for which you wish to make a timer setting.
3. Repeat the steps described above.
4. Keep the satellite tuner turned on until the VCR finishes recording the satellite programme for which you have made a timer setting.

To use the VCR after setting the timer

To use the VCR before a timer recording begins, just press ⏻. The TIMER indicator turns off and the VCR switches on. Remember to press ⏻ to reset the VCR after using the VCR.

You can also do the following tasks while the VCR is recording:

- Reset the counter.
- Display tape information on the TV screen.
- Check the timer settings.
- Watch another TV programme.

Tip

- To cancel the procedure, press VIDEO Plus+ before pressing ONCE, DAILY or WEEKLY.

Note

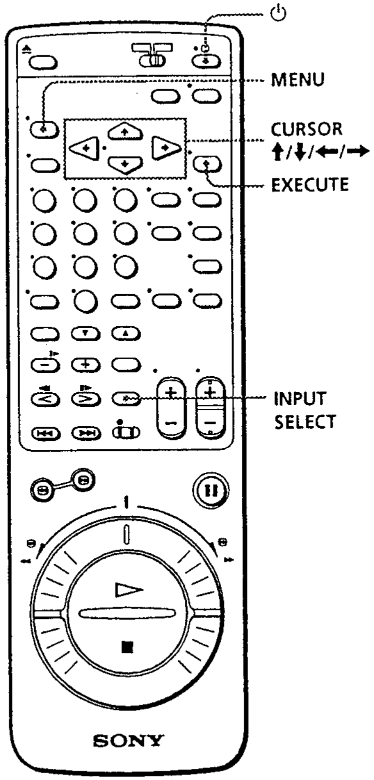
- If the VCR beeps repeatedly, this means that:
  - The PlusCode is incorrect.
  - ONCE, DAILY, or WEEKLY was selected incorrectly. You cannot select DAILY or WEEKLY for a programme that airs more than seven days ahead.

Setting the timer manually

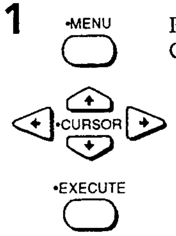
If VIDEO Plus+ is not available in your area, follow the instructions below to set the timer to record programmes.

Before you start...

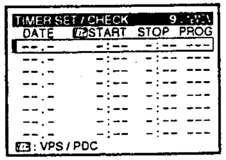
- Check that the VCR clock is set to the correct time.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.
- Turn on your TV and set it to the video channel.



1



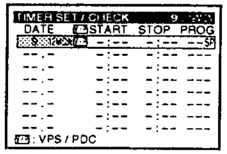
Press MENU and select TIMER SET/ CHECK, then press EXECUTE.



```
TIMER SET / CHECK         9 .
 DATE     START  STOP  PROG
 --.-      -:--   -:--  ---
 --.-      -:--   -:--  ---
 --.-      -:--   -:--  ---
 --.-      -:--   -:--  ---
 --.-      -:--   -:--  ---
 --.-      -:--   -:--  ---
 --.-      -:--   -:--  ---
 --.-      -:--   -:--  ---
   : VPS / PDC
```

2 •CURSOR

Set the date, PDC function, start and stop times, programme position, and tape speed:



DATE	▨START	STOP	PROG
9 [illegible] ▨	-:--	-:--	--SP
--.-	-:--	-:--	---
--.-	-:--	-:--	---
--.-	-:--	-:--	---
--.-	-:--	-:--	---
--.-	-:--	-:--	---
--.-	-:--	-:--	---
--.-	-:--	-:--	---

1. Press CURSOR ➡ to highlight each item in turn.
2. Press CURSOR ⬆/⬇ to set each item.

To correct a setting, press CURSOR ⬅ to return to that setting and reset.

To record the same programme every day or the same day every week, press CURSOR ⬇ while the date is highlighted. For details, see "Daily/weekly recording" on the next page.

If you don't want to use the PDC function, press CURSOR ⬆/⬇ to turn off V/P in the " V/P " position. For details, see "Timer recording with PDC signals" on the next page.

To record from other sources connected to the EURO-AV (LINE-1) or EURO-AV (LINE-3) connector, or the LINE-2 IN jacks, press INPUT SELECT to display "L1," "L3," or "L2" in the "PROG" position.

---

3 •CURSOR

Press CURSOR ➡ to confirm the setting.

The cursor (▮) appears at the top of the line. To enter another setting, move the cursor to the next line and repeat step 2.

---

4 •EXECUTE

Press EXECUTE.

---

5 •⏻

Press ⏻ to turn off the VCR.

The TIMER indicator appears in the display window and the VCR stands by for recording.

To record from a decoder or other source, leave the connected equipment switched on.

To stop recording

To stop the VCR while recording, press ■ STOP.

continued

Setting the timer manually (continued)

Daily/weekly recording

In step 2 above, press CURSOR ⬇ to select the recording pattern. Each time you press CURSOR ⬇, the indication changes as shown below.

the current date → SUN-SAT → MON-SAT → MON-FRI → EVERY SAT .....
→ EVERY MON → EVERY SUN → 1 month later →(cycles backward)
→ the current date

Timer recording with PDC signals

The broadcast systems transmit PDC (Programme Delivery Control) signals with its TV programmes. These signals ensure that your timer recordings are made regardless of broadcast delay, early starts or broadcast interruptions.

In step 2 above, press CURSOR ⬆/⬇ to turn on/off the V/P indicator after you set the recording date. If you do not want to set the PDC function, turn off the V/P indicator.

You can also use the PDC function for a source connected to the EURO-AV (LINE-1) and EURO-AV (LINE-3) connectors, and the LINE-2 IN jacks.

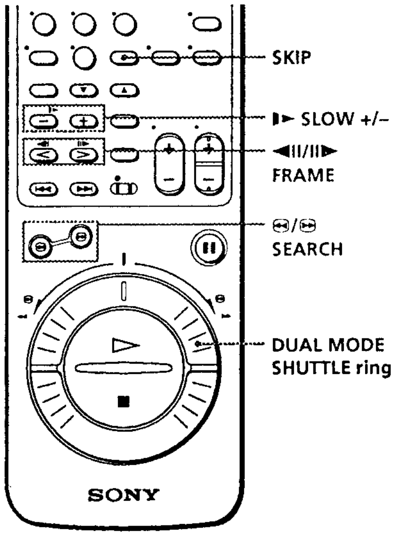
Tips

- To set the programme position, you can also use the PROG +/– or programme number buttons.
- To set the tape speed, you can also use TAPE SPEED.

Notes

- When setting the timer with PDC signals, enter the start and stop times exactly as indicated in the TV programme guide, otherwise the PDC function won't work.
- If the PDC signal is too weak or the broadcasting station failed to transmit PDC signals, the VCR will start recording at the set time without using the PDC function.
- "TIMER" flashes in the display window when you press ⏻ with no tape inserted.

Playing/searching at various speeds



Playback options	Operation
Play at various speeds	During playback, turn the DMS ring and hold it at the speed you want.
Fast-forward/rewind	During stop, turn the DMS ring to ►► FF or ◄◄ REW and release.
View the picture during fast-forward or rewind	During fast-forward, turn the DMS ring to ►► FF. During rewind, turn the DMS ring to ◄◄ REW.
Play at twice the normal speed	During playback, turn the DMS ring to × 2.
Play at high speed	During playback or pause, press ⏩ SEARCH or ⏪ SEARCH. To change direction, press > or <.
Play in slow motion	During playback or pause, press I► SLOW +/–. Press the +/– buttons to change the speed. To change direction, press > or <.
Play frame by frame	During pause, press II► FRAME or ◄II FRAME. Hold the button down to play one frame each second.
Play in reverse	During playback, press <.
Skip a scene	During playback, press SKIP. Pressing once skips about 30 seconds.
Rewind and start play	During stop, hold the DMS ring on the VCR at the ◄◄ REW position and press ▷ PLAY on the VCR, then release the DMS ring.

To resume normal playback

Press ▷ PLAY.

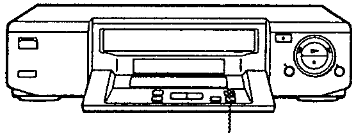
Tip

- Adjust the picture using ▼/▲ TRACKING NORMAL/SLOW STILL ADJUST if:
  - Streaks appear while playing in slow motion.
  - Bands appear at the top or bottom while pausing.
  - The picture shakes while pausing.

Notes

- The playback sound is muted during these operations.
- In the LP mode, noise may appear or there may be no colour.

Recording TV programmes using the quick timer



After starting recording in the normal way, you can have the VCR stop recording automatically after a specified duration.

1 While recording, press QUICK TIMER once.

2 Press QUICK TIMER repeatedly to set the duration.

Each press advances the time in increments of 30 minutes.

→ 0:00 → 0:30 → 1:00 ----→ 10:30 → 11:00 ↵

The duration decreases minute by minute to 0:00, then the VCR stops recording and turns off automatically.

To extend the duration

Press QUICK TIMER repeatedly to set to the new duration.

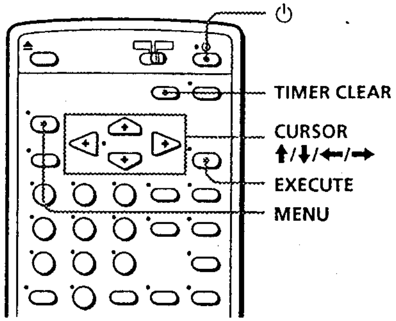
To stop recording

To stop the VCR while recording, press ■ STOP.

Tip

- You can also set the quick timer and start recording during the stop mode.

Checking/ changing/ cancelling timer settings



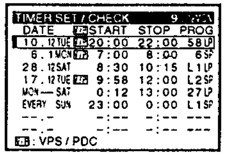
Before you start...

- Turn on your TV and set it to the video channel.

1 Press ⏻ to turn on the VCR.

2 Press MENU, then select TIMER SET/CHECK.

- If you want to change a setting, go on to the next step.
- If you do not need to change the settings, press EXECUTE, then turn off the VCR to return to recording standby.



TIMER SET / CHECK 9 [illegible]

DATE	V/P	START	STOP	PROG
10 . 12 TUE	V/P	20:00	22:00	58 LP
6 . 1 MON	V/P	7:00	8:00	6 SP
28 . 12 SAT		8:30	10:15	L1 LP
17 . 12 TUE	V/P	9:58	12:00	L2 SP
MON — SAT		0:12	13:00	27 LP
EVERY SUN		23:00	0:00	L1 SP
--.-		-:--	-:--	---
--.-		-:--	-:--	---

V/P : VPS / PDC

3 Press CURSOR ↑/↓ to select the setting you want to change or cancel:

- To change the setting, press CURSOR ←/→ to highlight the item you want to change, and press CURSOR ↑/↓ to reset it.
  To cancel the PDC function, turn off the V/P indicator.
  Then, press CURSOR → repeatedly until the cursor (I) appears at the top of the line.
- To cancel the setting, press TIMER CLEAR.

4 Press EXECUTE.

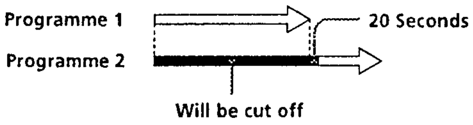
If any settings remain, turn off the VCR to return to recording standby.

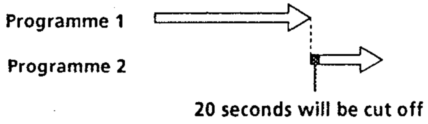
continued

Checking/changing/cancelling timer settings (continued)

When the timer settings overlap

The programme that starts first has priority and the second programme starts recording only after the first programme has finished. If the programmes start at the same time, the programme listed first in the menu has priority.





Recording stereo and bilingual programmes

In NICAM system

This VCR receives and records stereo and bilingual programmes based on the NICAM system (the NICAM indicator appears). When a stereo or bilingual programme is received, the STEREO indicator appears in the display window.

To record a NICAM programme, HIFI AUDIO in the SET UP MENU should be set to NICAM (initial setting). To check the menu setting, see page 60 for details.

To select the sound while recording

Press AUDIO MONITOR to select the sound you want.

Stereo programme

To listen to	On-screen display	Display window
Stereo	STEREO	STEREO
Standard sound*	No indicator	No indicator

* Usually the mixed sound of left and right channels (monaural)

Bilingual programme

To listen to	On-screen display	Display window
Main	MAIN	STEREO
Sub	SUB	STEREO
Main and sub	MAIN/SUB	STEREO
Standard sound*	No indicator	No indicator

* Usually the main sound (monaural)

continued

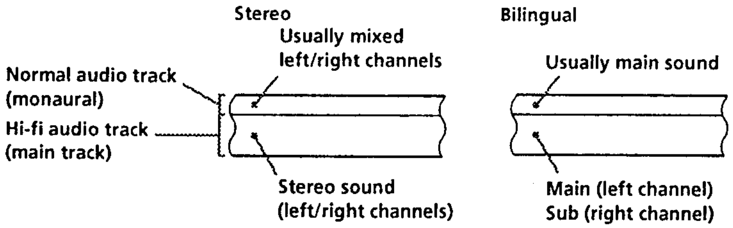
Selecting the sound during playback

Press AUDIO MONITOR to select the sound you want.

To listen to	On-screen display	Display window
Stereo/main and sub (left and right channels)	STEREO	STEREO
Left channel/main	LCH	STEREO
Right channel/sub	RCH	STEREO
Standard sound	No indicator	No indicator

How sound is recorded on a video tape

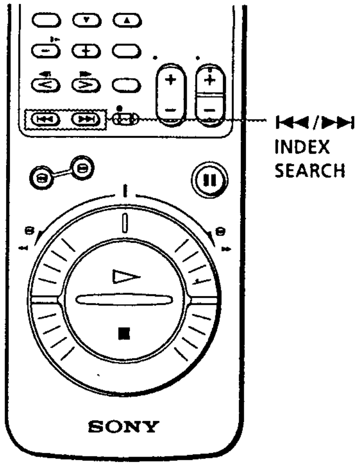
The VCR records sound onto two separate tracks. Hi-fi audio is recorded onto the main track along with the picture. Monaural sound is recorded onto the normal audio track along the edge of the tape.


Stereo
Bilingual
Usually mixed left/right channels
Usually main sound
Normal audio track (monaural)
Hi-fi audio track (main track)
Stereo sound (left/right channels)
Main (left channel) Sub (right channel)

Notes

- To listen to playback sounds in stereo, you must use the EURO-AV or AUDIO OUT connections.
- When you play a tape recorded in monaural, the sound is heard in monaural regardless of the AUDIO MONITOR setting.
- If the AUDIO MONITOR button does not function, check that AUDIO MIX in the SET UP MENU is set to OFF.
- If HIFI AUDIO is set to STD, the standard sound will be recorded on both the hi-fi and normal audio tracks. Pressing AUDIO MONITOR will not change the sound.

Searching using the index function

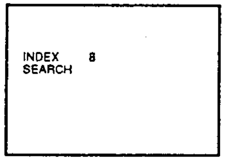

I◀◀/▶▶I
INDEX
SEARCH
SONY

The VCR marks the tape with an index signal at the point where each recording begins. Use these signals as references to find a specific recording. The VCR can search up to 99 index signals ahead of or behind the current position.

1 Insert an indexed tape into the VCR.

2 Press I◀◀ /▶▶I INDEX SEARCH repeatedly to specify how many index signals ahead or behind you want to search:

- To search ahead, press ▶▶I INDEX SEARCH.
- To search backwards, press I◀◀ INDEX SEARCH.


INDEX SEARCH 8

The VCR starts searching and the index number on the TV screen counts down to zero. Playback starts automatically from that point.

To stop searching

Press ■ STOP.

Note

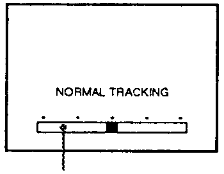
- No index signal will be added when recording starts from recording pause. However, an index signal will be marked if you change the channel during recording pause.

Adjusting the picture

Adjusting the tracking

Although the VCR automatically adjusts the tracking when playing a tape (the AUTO TRACKING indicator flashes in the display window, then lights steadily), distortion may occur if the tape was recorded in poor condition. If so, manually adjust the tracking.

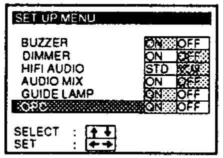
Press ▼/▲ TRACKING NORMAL/SLOW to display the tracking meter. The distortion should disappear as you press one of the two buttons. If you cannot get a clear picture with manual adjustment, press TRACKING AUTO/MANUAL to return to automatic adjustment.



Tracking meter

About Optimum Picture Control (OPC)

Optimum Picture Control (OPC) automatically improves recording and playback quality by adjusting the VCR to the condition of the video heads and tape. To maintain better picture quality, we recommend that you set OPC to ON in the SET UP MENU (with the OPC indicator in the display window lit).



OPC playback

The OPC function automatically works on all types of tapes, including rental tapes and tapes that were not recorded with OPC.

OPC recording

Whenever you insert a tape and first start recording, the VCR adjusts to the tape using the OPC function (the OPC indicator flashes rapidly). This adjustment is retained until the tape is ejected.

To deactivate the OPC

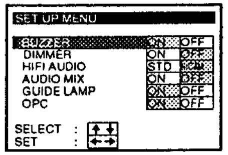
Press MENU and select SET UP MENU, then set OPC to OFF. The OPC indicator in the display window goes off.

Notes

- You can adjust the tracking for the NTSC-recorded tape but the tracking meter won't be displayed.
- There is a delay of a few seconds before the VCR actually starts recording while the VCR analyses the tape. To avoid the delay, first set the VCR to recording pause (the OPC indicator flashes slowly) and press ● REC to have the VCR analyse the tape (the OPC indicator flashes rapidly). After the OPC indicator stops flashing, press ❚❚ PAUSE to start recording immediately. If you want to start recording quickly without using the OPC function, first set the VCR to recording pause (the OPC indicator flashes slowly) and press ❚❚ PAUSE to start recording.

Changing menu options

1 Press MENU, then select SET UP MENU.



2 Press CURSOR ↑/↓ to select the option to change, then press CURSOR ←/→ to change the setting.

3 Press EXECUTE to return to the original screen.

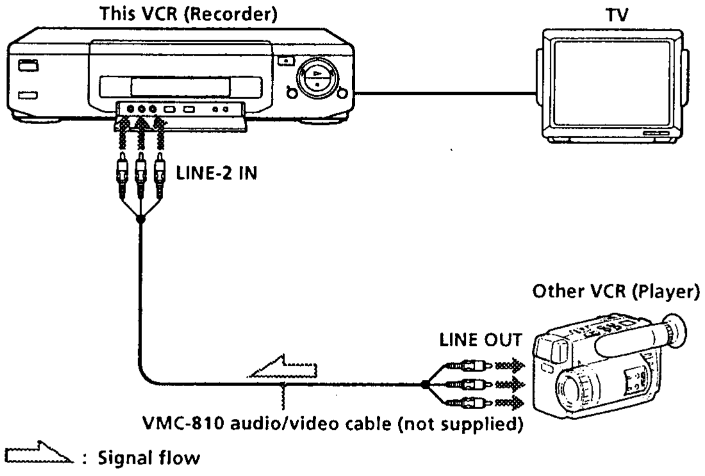
Menu choices

Initial settings are indicated in bold print.

Menu option	Set this option to
BUZZER	**ON** to output a beep sound when all illogical operation is made. OFF to deactivate it.
DIMMER	ON to make the display window dim, **OFF** to make it brighter.
HIFI AUDIO	STD to record standard sound on the hi-fi audio track. **NICAM** to record NICAM broadcasts on the hi-fi audio track. For details, see page 50.
AUDIO MIX	ON to listen to the hi-fi and normal audio tracks at the same time. The AUDIO MONITOR button will not function. **OFF** to listen to the hi-fi and normal audio tracks separately. Select the sound using the AUDIO MONITOR button. For details, see page 50.
GUIDE LAMP	**ON** to illuminate the ● REC button on the VCR in orange when you can start recording. OFF to turn it off.
OPC	**ON** to switch on the OPC (Optimum Picture Control) function and improve picture quality, OFF to switch off OPC. For details, see page 52.

Connecting to a VCR or stereo system

How to connect to record on this VCR



Notes

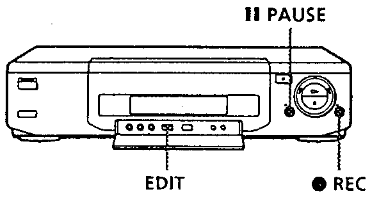
- Make sure you connect the plugs to jacks of the same colour.
- If the other VCR is a monaural type, leave the red plugs unconnected.
- If you connected this VCR to both the LINE IN and LINE OUT jacks of the other VCR, select the input correctly to prevent a humming noise.
- You can also use the EURO-AV (LINE-1 or LINE-3 IN) connector instead.

How to connect to a stereo system

Connect the LINE-2 IN AUDIO L/R jacks on this VCR to the audio output jacks on the stereo system, using the RK-C510KS audio cable (not supplied).

Basic editing

(when recording on this VCR)



Before you start editing

- Turn on your TV and set it to the video channel.
- Press INPUT SELECT to display "L2" (or "L1" or "L3" depending on the connection) in the display window.
- Press TAPE SPEED to select the tape speed, SP or LP.
- On this VCR, set the EDIT switch to ON. If the other VCR has a similar switch, set it to ON as well.

1. Insert a source tape with its safety tab removed into the other (playback) VCR.

   Search for the point to start playback and set it to playback pause.
2. Open the drop down panel and insert a tape with its safety tab in place into this (recording) VCR.

   Search for the point to start recording and press **II** PAUSE.
3. Press ● REC on this VCR and set it to recording pause.
4. To start editing, press the **II** PAUSE buttons on both VCRs at the same time.

To stop editing

Press the ■ STOP buttons on both VCRs.

Tips

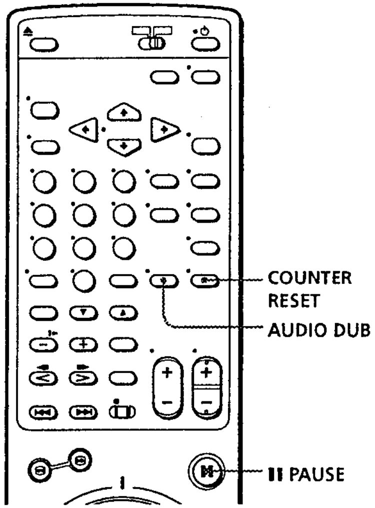
- To edit more precisely, press the **II** PAUSE buttons on the VCRs to release pause.
- To cut out unwanted scenes while editing, press **II** PAUSE on this VCR when an unwanted scene begins. When it ends, press **II** PAUSE again to resume recording (Assemble Editing).

Note

- If you start recording following the procedure above, the VCR won't start recording with the OPC function. To record a tape with the OPC function, press ● REC again during recording pause in step 3 so that the VCR analyses the tape. Then when you start recording in step 4, press **II** PAUSE after the OPC indicator stops flashing. If you press **II** PAUSE before the OPC indicator stops flashing, the OPC function is cancelled.

Audio dubbing

This feature lets you record over the normal audio track. The monaural sound previously recorded is replaced while the original hi-fi sound remains unchanged. Use this feature to add commentary to a tape that you have recorded with a camcorder.



Before you start editing...

- Turn on your TV and set it to the video channel.
- Press INPUT SELECT to display "L2" in the display window.

1 Insert a source tape into the stereo system (or the playback VCR). Search for the point to start playback and set it to playback pause.

2 Open the drop down panel and insert a prerecorded tape with its safety tab in place into this (recording) VCR. Search for the end of the section to be replaced and press ❚❚ PAUSE.

3 Press COUNTER RESET on this VCR to reset the counter to "0H00M00S."

4 Rewind the prerecorded tape to the beginning of the section to be replaced.

The VCR pauses.

5 Press AUDIO DUB.

The audio dubbing indicator ⊖ appears in the display window.

6 To start editing, press the ❚❚ PAUSE buttons on this VCR and the stereo system (or other VCR) at the same time.

When the counter reaches "0H00M00S," audio dubbing stops automatically.

To stop while editing

Press the ■ STOP buttons on this VCR and the stereo system (or other VCR).

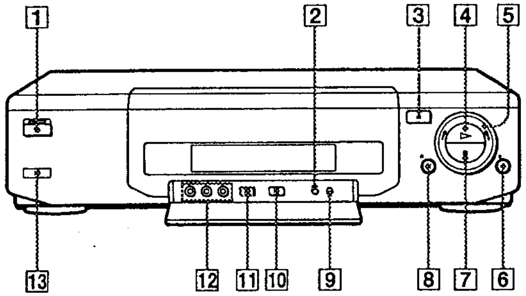
To listen to both the hi-fi and normal audio

Set AUDIO MIX to ON in the SET UP MENU (page 53). Use this feature to listen to dubbed audio over the original hi-fi audio. When AUDIO MIX is set to ON, the AUDIO MONITOR button does not function. Remember to reset AUDIO MIX to OFF after playing the tape.

Index to parts and controls

Refer to the pages indicated in parentheses ( ) for details.

Front panel



1 ON/STANDBY switch/indicator (11)

2 EASY SET UP button (13)

3 ≜ EJECT button (33)

4 ▷ PLAY button (44)

5 DUAL MODE SHUTTLE ring (33, 44)

6 ● REC button/guide lamp (53, 55)

7 ■ STOP button (55, 56)

8 ❚❚ PAUSE button (55, 56)

9 RF CHANNEL button (11)

10 STANDBY DISPLAY switch (10)

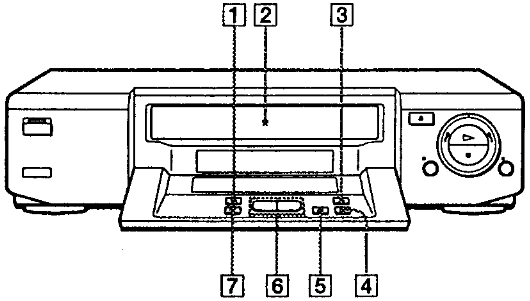
11 EDIT switch (55)

12 LINE-2 IN VIDEO/AUDIO L/R jacks (54)

13 Remote sensor (5)

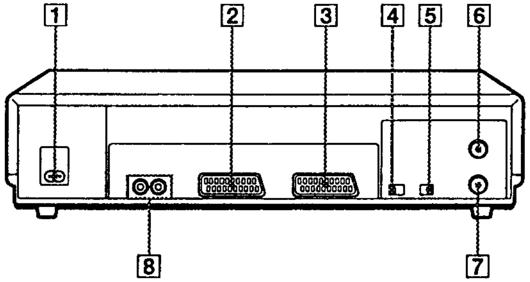
continued

Front panel, with cover opened



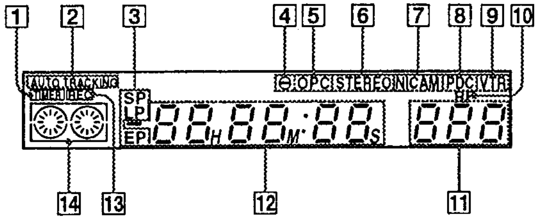
1 TV/VTR button (10, 36)
2 Tape compartment
3 QUICK TIMER button (46)
4 TAPE SPEED button (36)
5 COUNTER RESET button (33)
6 PROGRAM +/– buttons (11)
7 INPUT SELECT button (37, 55, 56)

Rear panel



1 AC IN connector (9)
2 ⊖→ EURO-AV (LINE-1)/PERITEL (LIGNE-1) /DISP ON/AVEC AFFICH connector (10)
3 →⊖ EURO-AV (LINE-3 IN) connector (37, 42, 43)
4 NTSC PB switch (33)
5 RF MODULATOR switch (9)
6 AERIAL OUT/ ANTENNE SORTIE connector (9)
7 AERIAL IN/ANTENNE ENTREE connector (9)
8 AUDIO OUT L/R/ SORTIE AUDIO D/G jacks (10)

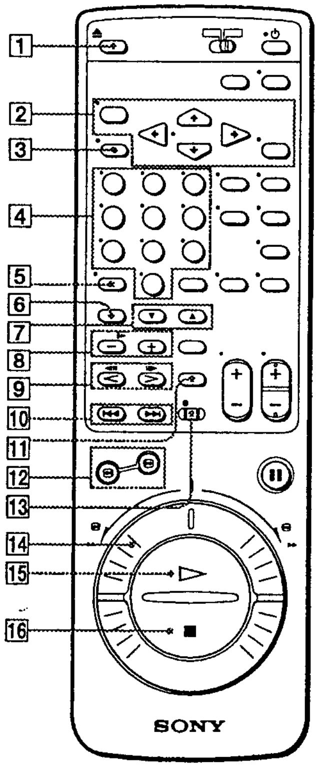
Display window



1 TIMER indicator (39, 42)
2 AUTO TRACKING indicator (52)
3 Tape speed indicator (36)
4 Audio dubbing indicator (56)
5 OPC indicator (52)
6 STEREO indicator (49)
7 NICAM indicator (49)
8 PDC indicator (43)
9 VTR indicator (10, 36)
10 RF indicator (11)
11 Line/programme position indicator (11, 35, 55, 56)
12 Time counter/clock (33)
13 REC indicator
14 Tape indicator

continued

Remote commander



1 ⏏ EJECT button (33)

2 Menu buttons (13)

MENU button
CURSOR ↑/↓/←/→ buttons
EXECUTE button

3 AUDIO MONITOR button (50)

4 Programme number buttons (7, 18, 38)

5 -/-- (ten's digit) button (37)

6 TRACKING AUTO/MANUAL button (52)

7 ▼/▲ TRACKING NORMAL/SLOW STILL ADJUST buttons (45, 52)

8 I▶ SLOW +/– buttons (44)

9 ◀II/II▶ FRAME </> buttons (44)

10 I◀◀/▶▶I INDEX SEARCH buttons (51)

11 INPUT SELECT button (37, 42, 55, 56)

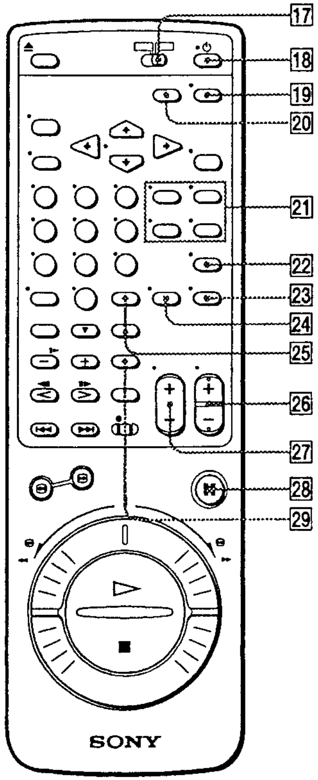
12 ⏪/⏩ SEARCH buttons (33, 44)

13 ● REC button (36)

14 DUAL MODE SHUTTLE ring (33, 44)

15 ▷ PLAY button (32)

16 ■ STOP button (33)



17 TV / VTR remote control switch (7)

18 ⏻ (on/standby) switch (6, 7, 42)

19 TV/VIDEO button (6, 10)

20 TIMER CLEAR button (27, 39, 47)

21 VIDEO Plus+ buttons (38, 39)

VIDEO Plus+ button
ONCE button
DAILY button
WEEKLY button

FASTEXT buttons (6, 7)

22 DISPLAY button (36)

23 COUNTER RESET button (33)

○ TV power on/TV mode select button *(for TV)* (6, 7)

24 AUDIO DUB button (56)

⊜ Teletext button *(for TV)* (6, 7)

25 SKIP button (44)

26 PROG +/– buttons (17, 35)

⏶/⏷ Teletext page access buttons *(for TV)* (6, 7)

27 VOL +/– buttons *(for TV)*

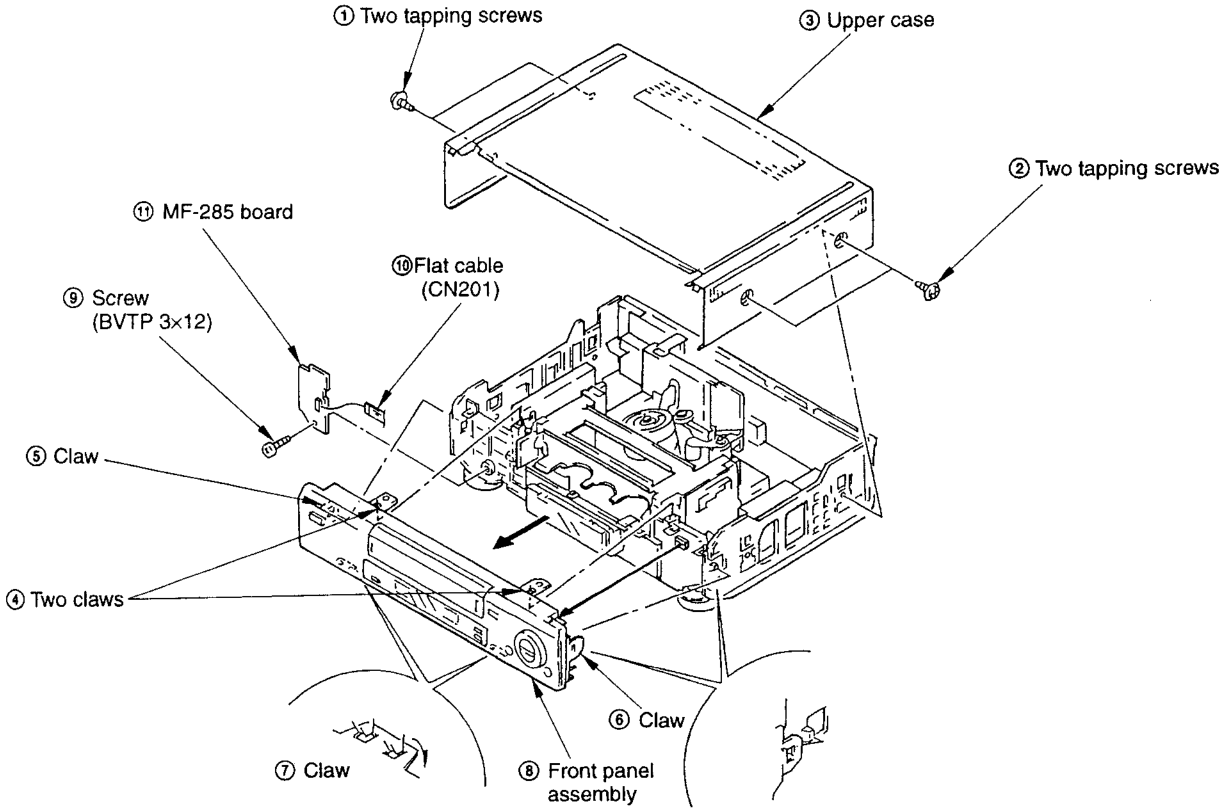
28 II PAUSE button (33)

29 TAPE SPEED button (36)

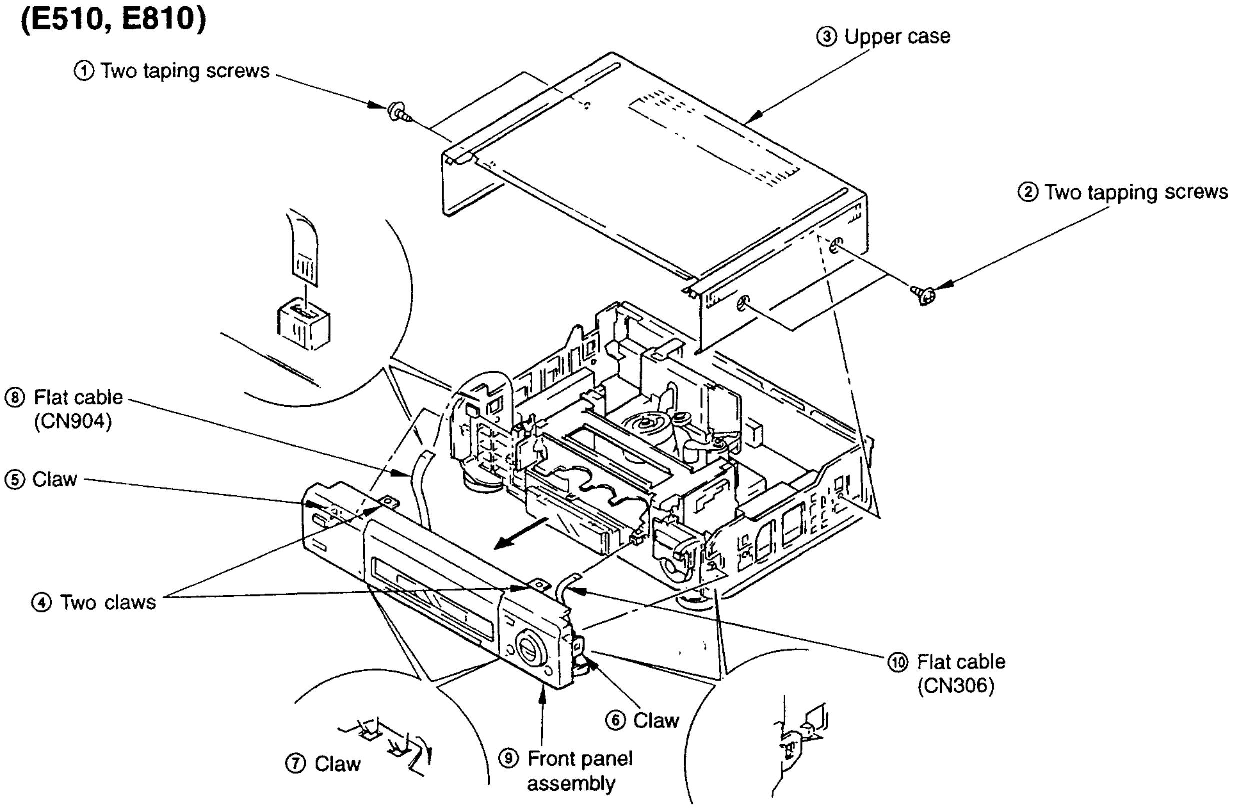
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

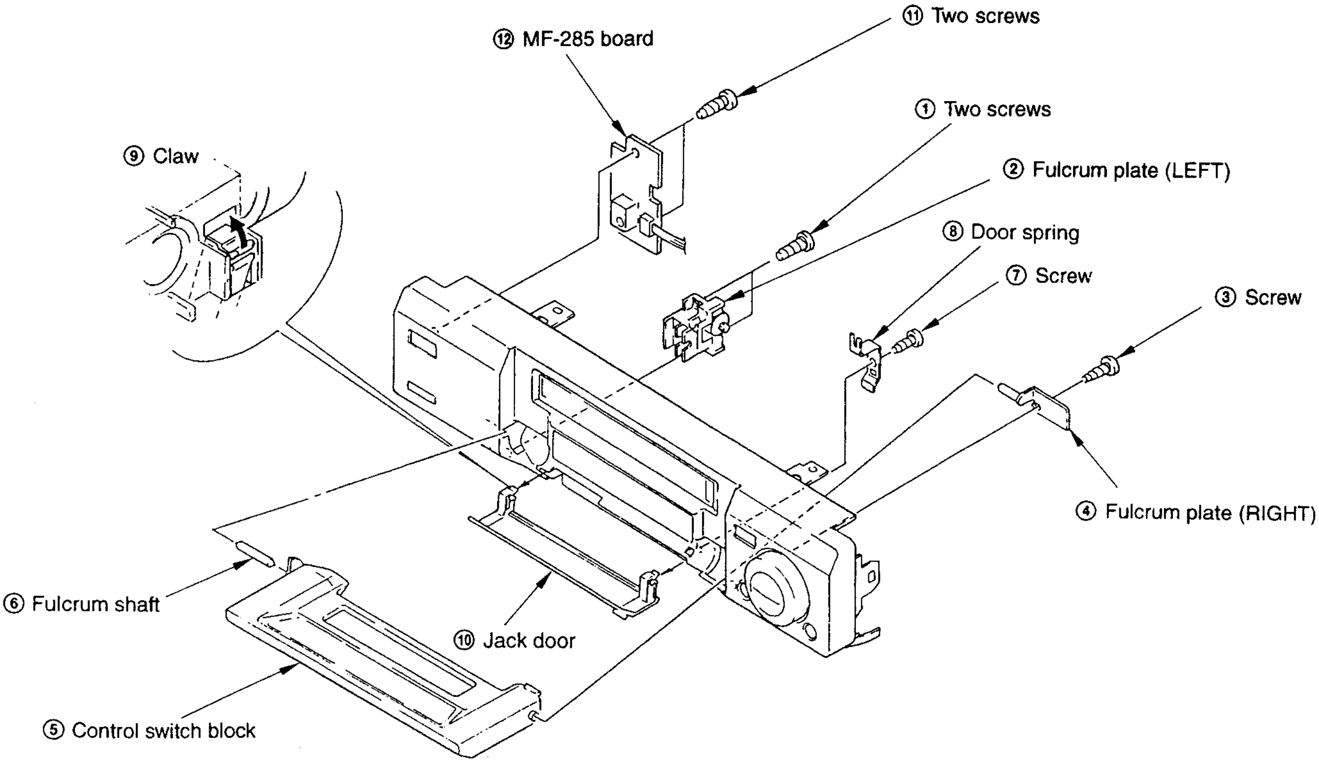
2-1. FRONT PANEL ASSEMBLY, CASE AND MF-285 BOARD (E710)


① Two tapping screws
③ Upper case
② Two tapping screws
⑪ MF-285 board
⑩Flat cable (CN201)
⑨ Screw (BVTP 3×12)
⑤ Claw
④ Two claws
⑥ Claw
⑦ Claw
⑧ Front panel assembly

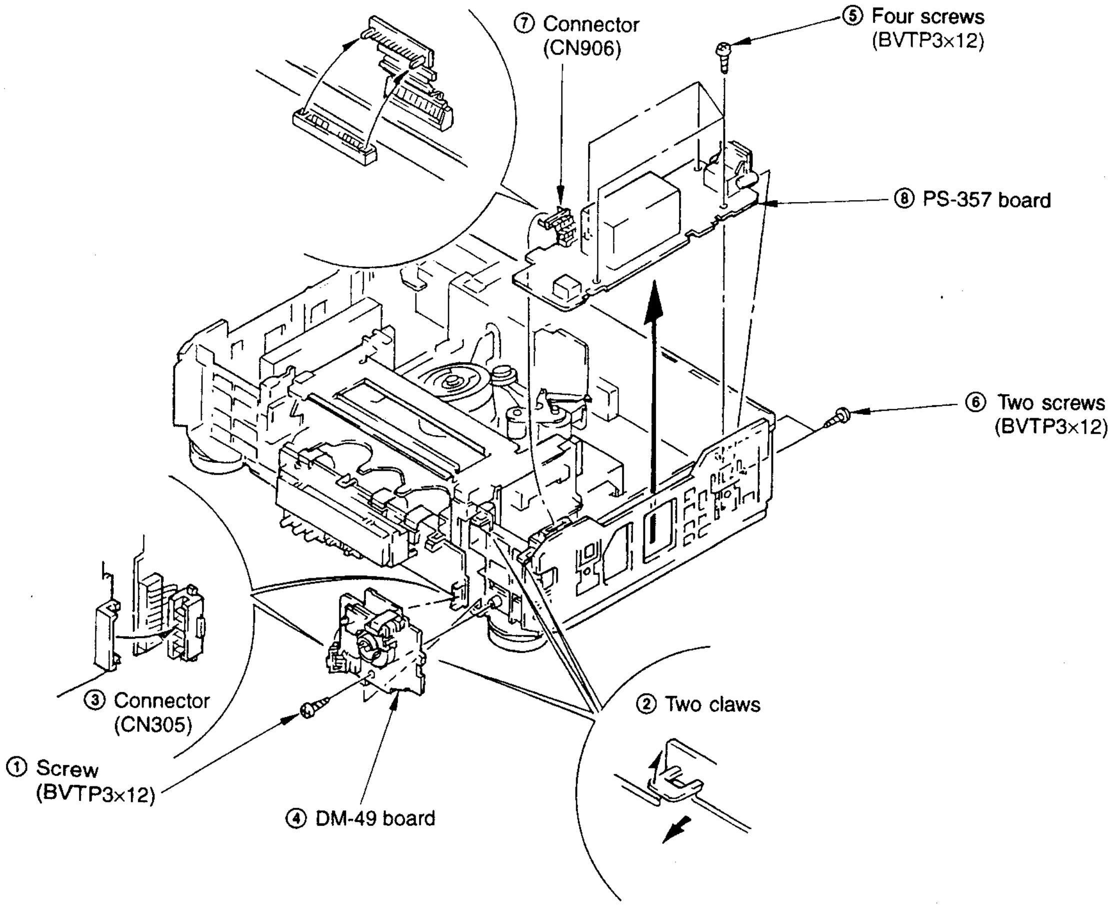
2-2. FRONT PANEL ASSEMBLY AND CASE (E510, E810)


③ Upper case
① Two taping screws
② Two tapping screws
⑧ Flat cable (CN904)
⑤ Claw
④ Two claws
⑩ Flat cable (CN306)
⑥ Claw
⑦ Claw
⑨ Front panel assembly

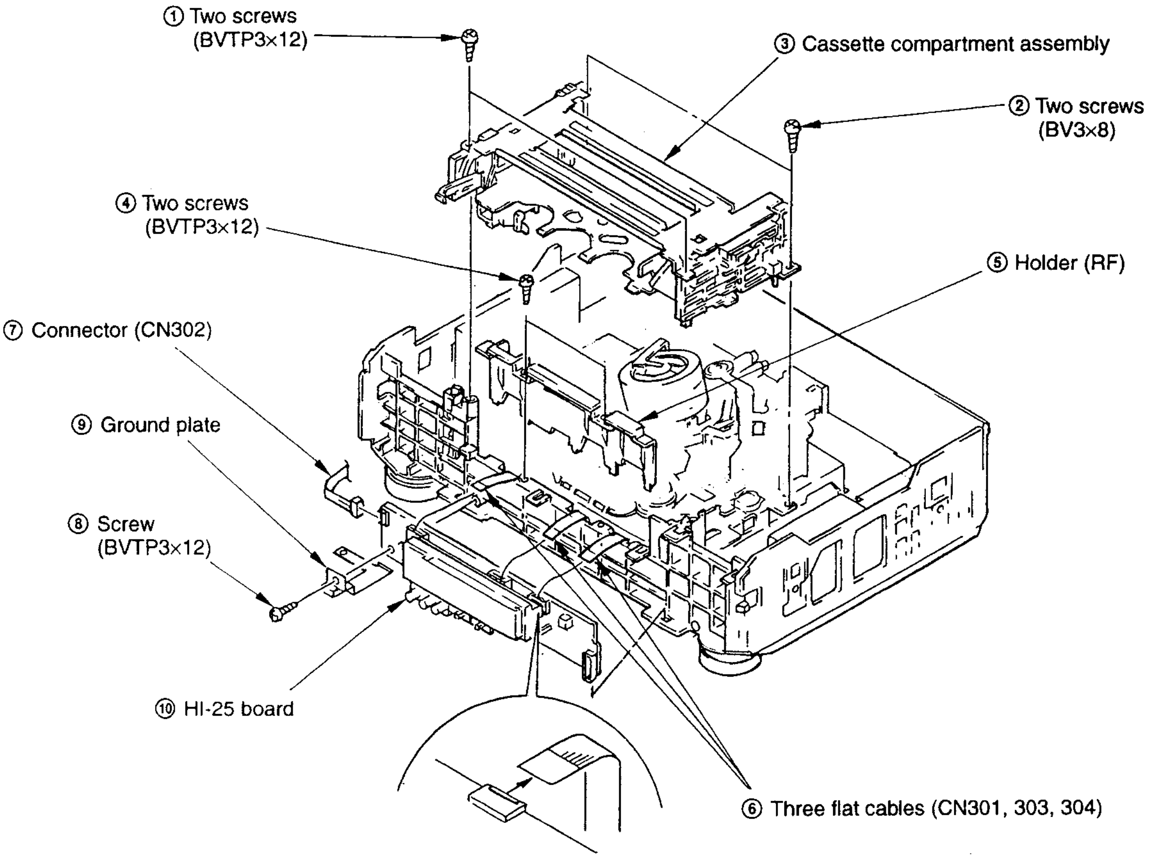
2-3. CONTROL SWITCH BLOCK AND MF-285 BOARD (E510, E810)


⑪ Two screws
⑫ MF-285 board
① Two screws
⑨ Claw
② Fulcrum plate (LEFT)
⑧ Door spring
⑦ Screw
③ Screw
④ Fulcrum plate (RIGHT)
⑥ Fulcrum shaft
⑩ Jack door
⑤ Control switch block

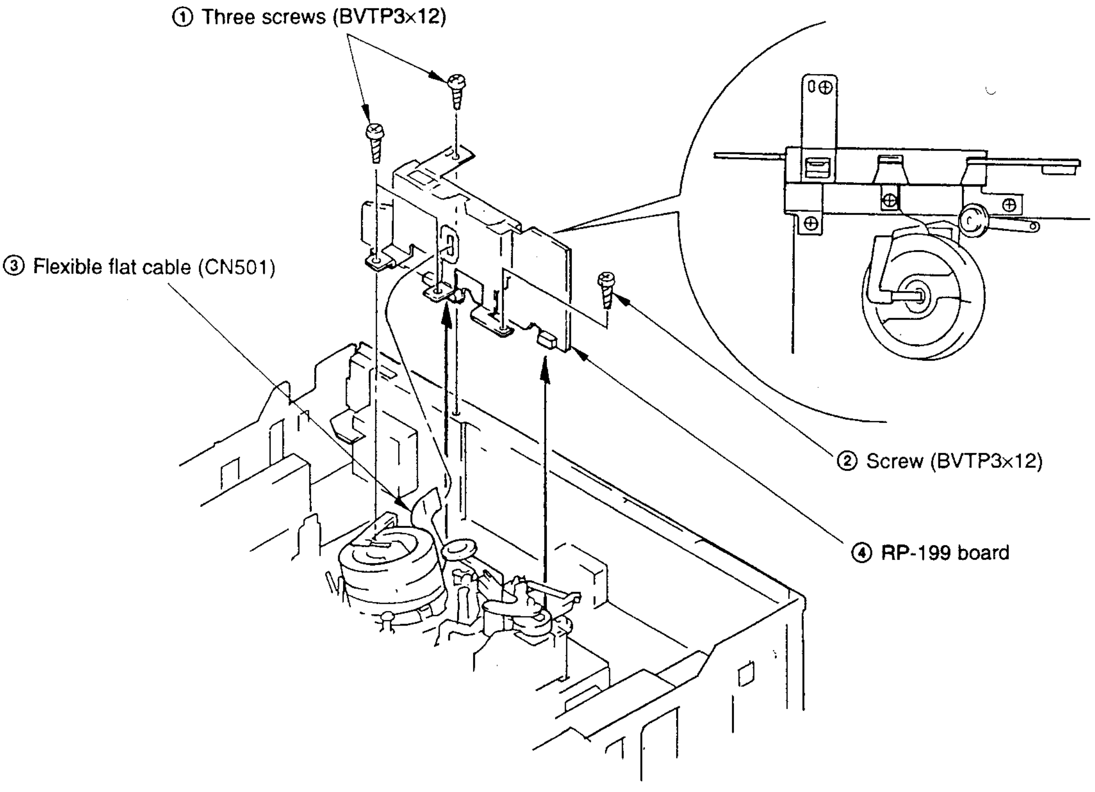
2-4. DM-49 BOARD AND PS-357 BOARD


⑦ Connector
(CN906)
⑤ Four screws
(BVTP3x12)
⑧ PS-357 board
⑥ Two screws
(BVTP3x12)
③ Connector
(CN305)
② Two claws
① Screw
(BVTP3x12)
④ DM-49 board

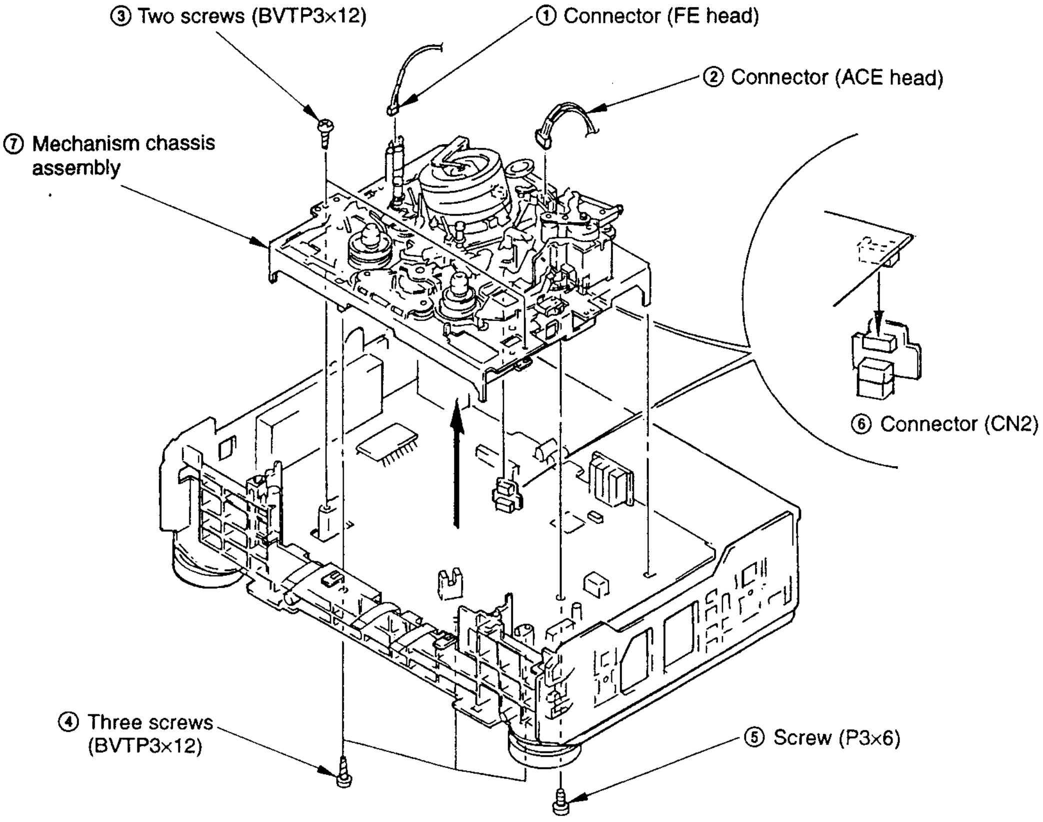
2-5. CASSETTE COMPARTMENT ASSEMBLY AND HI-25 BOARD


① Two screws (BVTP3×12)
③ Cassette compartment assembly
② Two screws (BV3×8)
④ Two screws (BVTP3×12)
⑤ Holder (RF)
⑦ Connector (CN302)
⑨ Ground plate
⑧ Screw (BVTP3×12)
⑩ HI-25 board
⑥ Three flat cables (CN301, 303, 304)

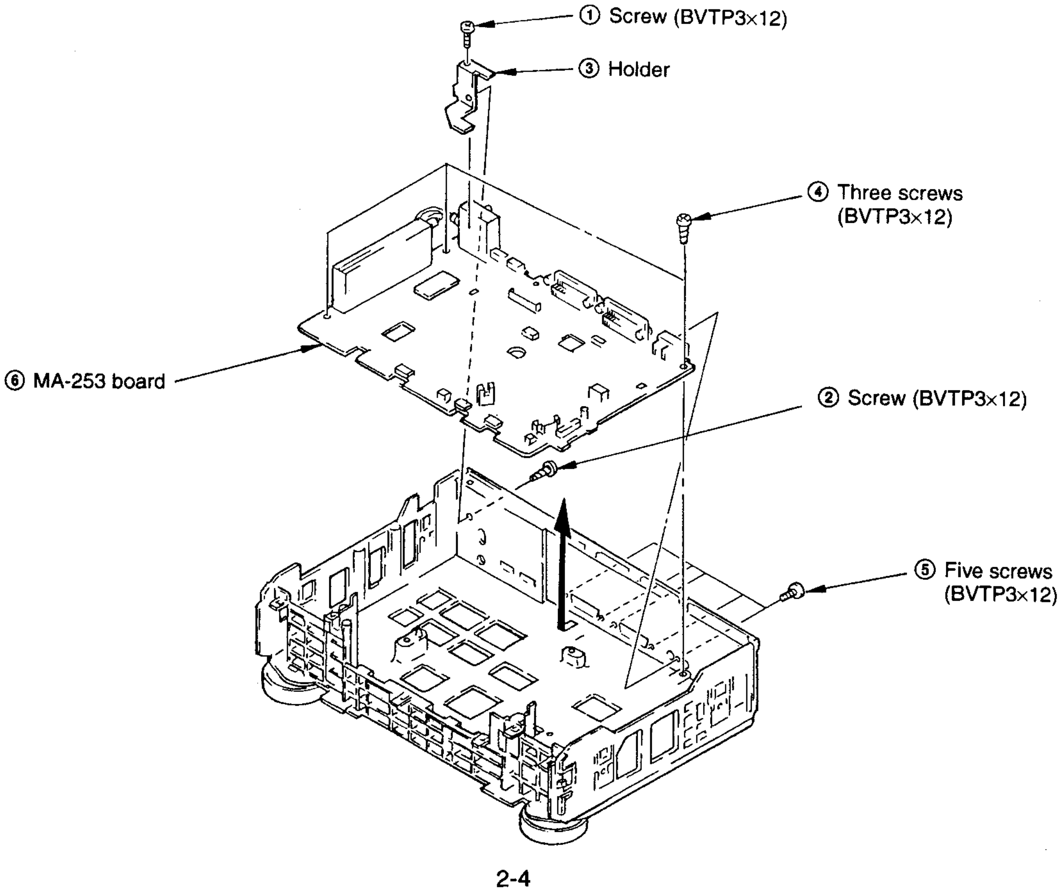
2-6. RP-199 BOARD


① Three screws (BVTP3×12)
③ Flexible flat cable (CN501)
② Screw (BVTP3×12)
④ RP-199 board

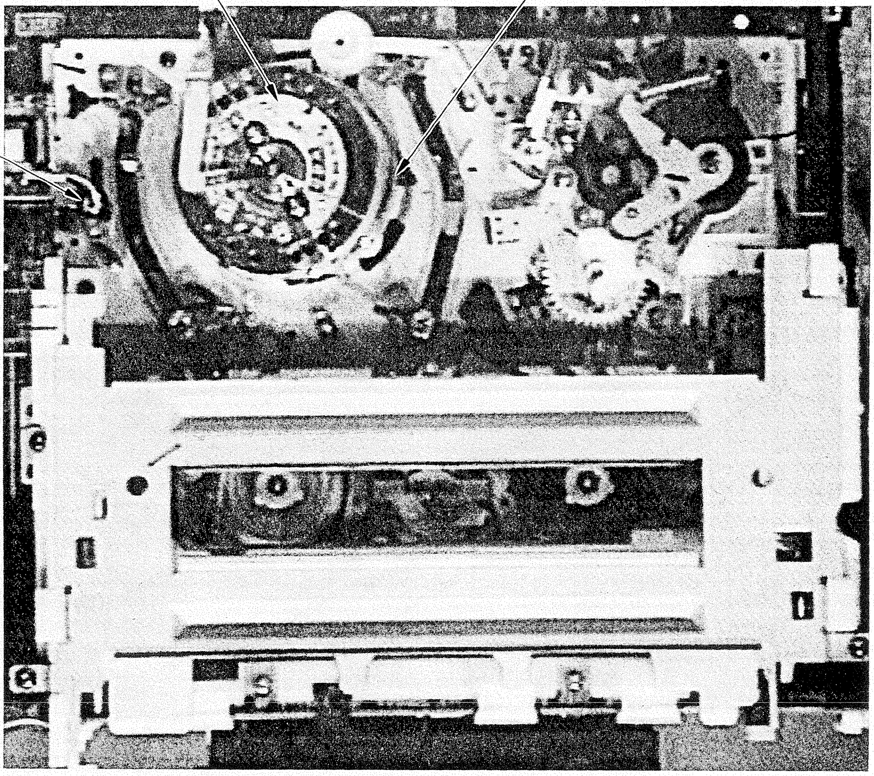
2-7. MECHANISM CHASSIS ASSEMBLY


③ Two screws (BVTP3×12)
① Connector (FE head)
② Connector (ACE head)
⑦ Mechanism chassis assembly
⑥ Connector (CN2)
④ Three screws (BVTP3×12)
⑤ Screw (P3×6)

2-8. MA-253 BOARD


① Screw (BVTP3×12)
③ Holder
④ Three screws (BVTP3×12)
⑥ MA-253 board
② Screw (BVTP3×12)
⑤ Five screws (BVTP3×12)

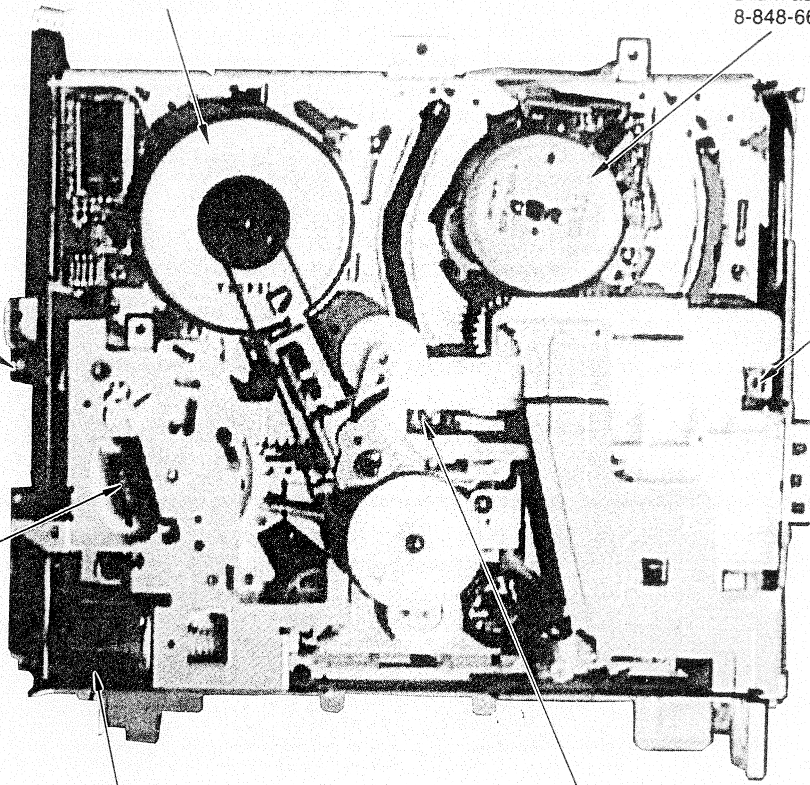
2-9. INTERNAL VIEWS



Drum assembly (DZH-74B/Q-RP)
8-848-682-11 (E510)
Drum assembly, rotary upper (DZR-66-R)
8-848-622-02 (E710, E810)

Drum assembly, lower (DZL-51/J-RP)
8-848-666-11 (E710, E810)

FE head
1-500-144-11



M902
Capstan motor (SCV-0801A/Z-NP)
1-698-409-11

Drum assembly (DZH-74B/Q-RP)
8-848-682-11 (E510)
Drum assembly, lower (DZL-51/J-RP)
8-848-666-11 (E710, E810)

Q261
Tape top sensor
8-729-025-92

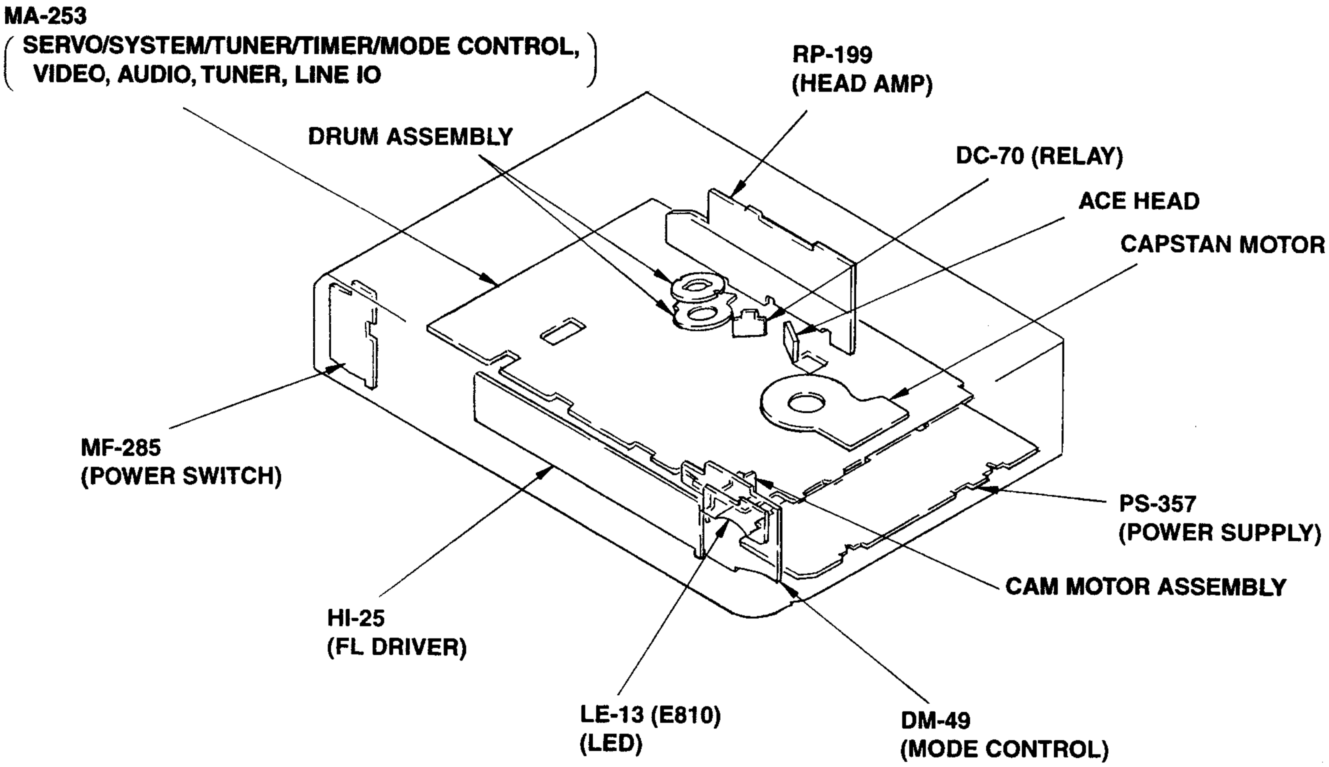
Q262
Tape end sensor
8-729-025-92

Rotary switch
1-762-076-11

M903
Cam motor assembly
X-3943-883-1

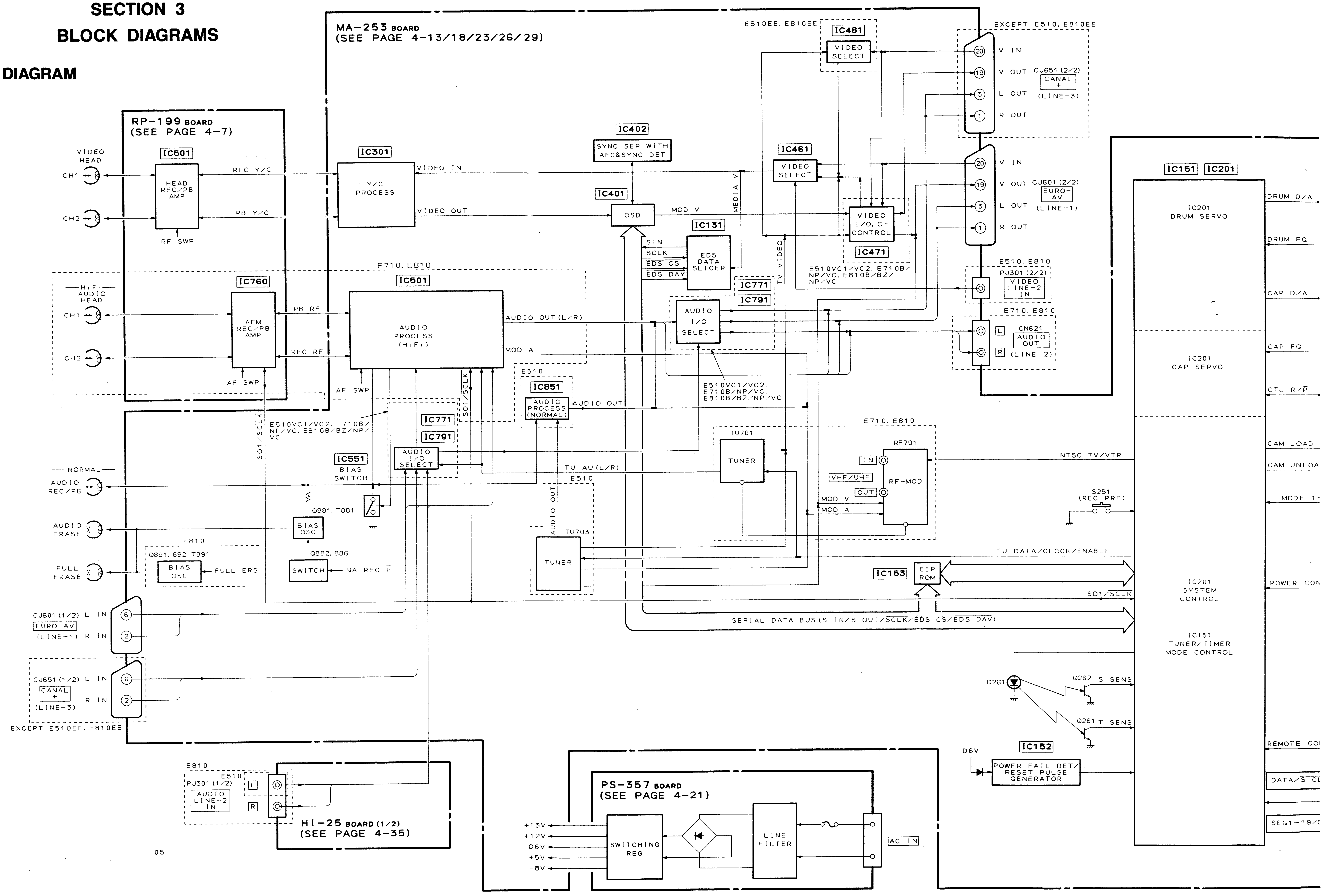
D261
Tape top/end LED
8-719-048-26

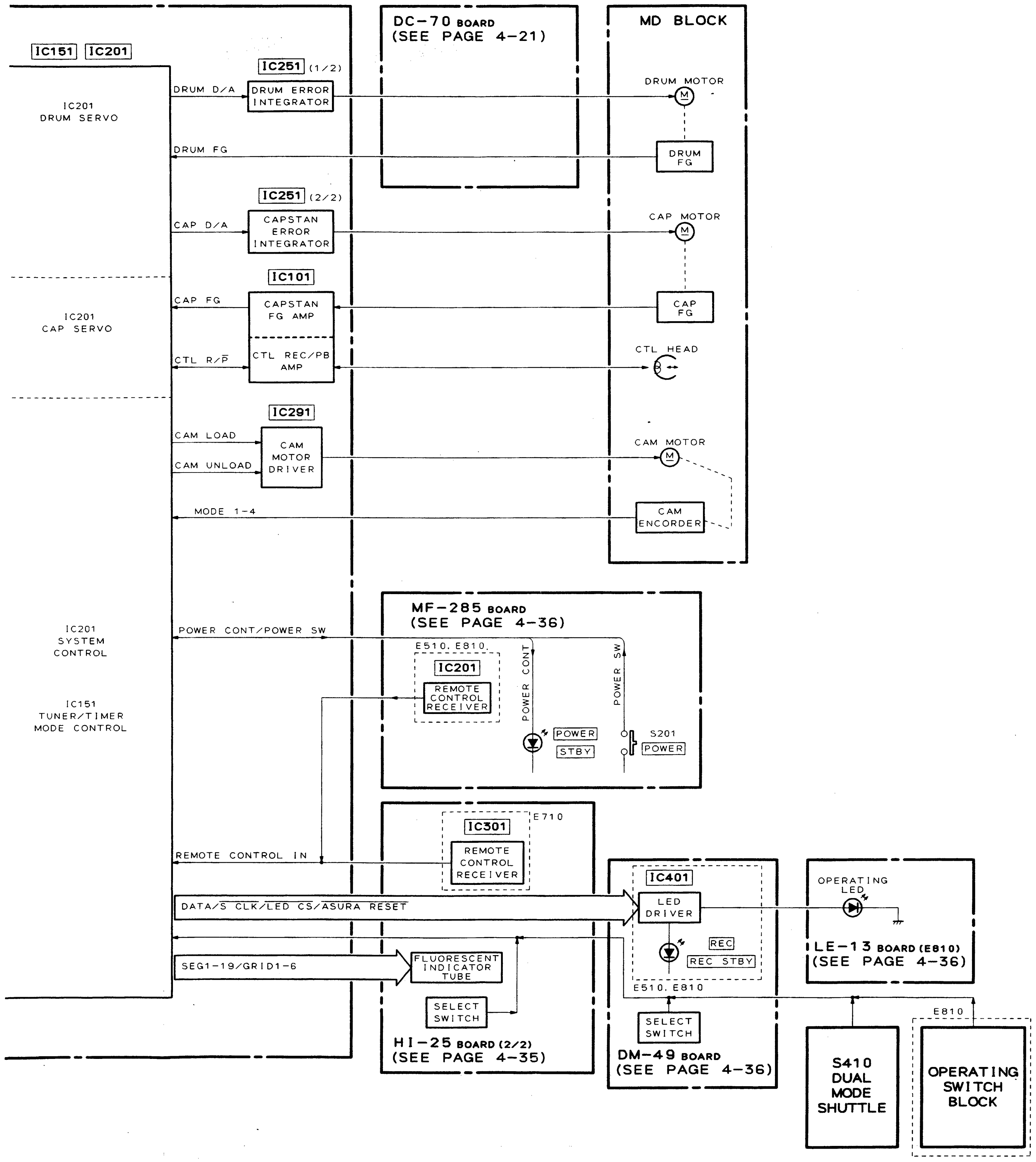
2-10. CIRCUIT BOARDS LOCATION


MA-253
(SERVO/SYSTEM/TUNER/TIMER/MODE CONTROL, VIDEO, AUDIO, TUNER, LINE IO)
RP-199
(HEAD AMP)
DRUM ASSEMBLY
DC-70 (RELAY)
ACE HEAD
CAPSTAN MOTOR
MF-285
(POWER SWITCH)
PS-357
(POWER SUPPLY)
CAM MOTOR ASSEMBLY
HI-25
(FL DRIVER)
LE-13 (E810)
(LED)
DM-49
(MODE CONTROL)

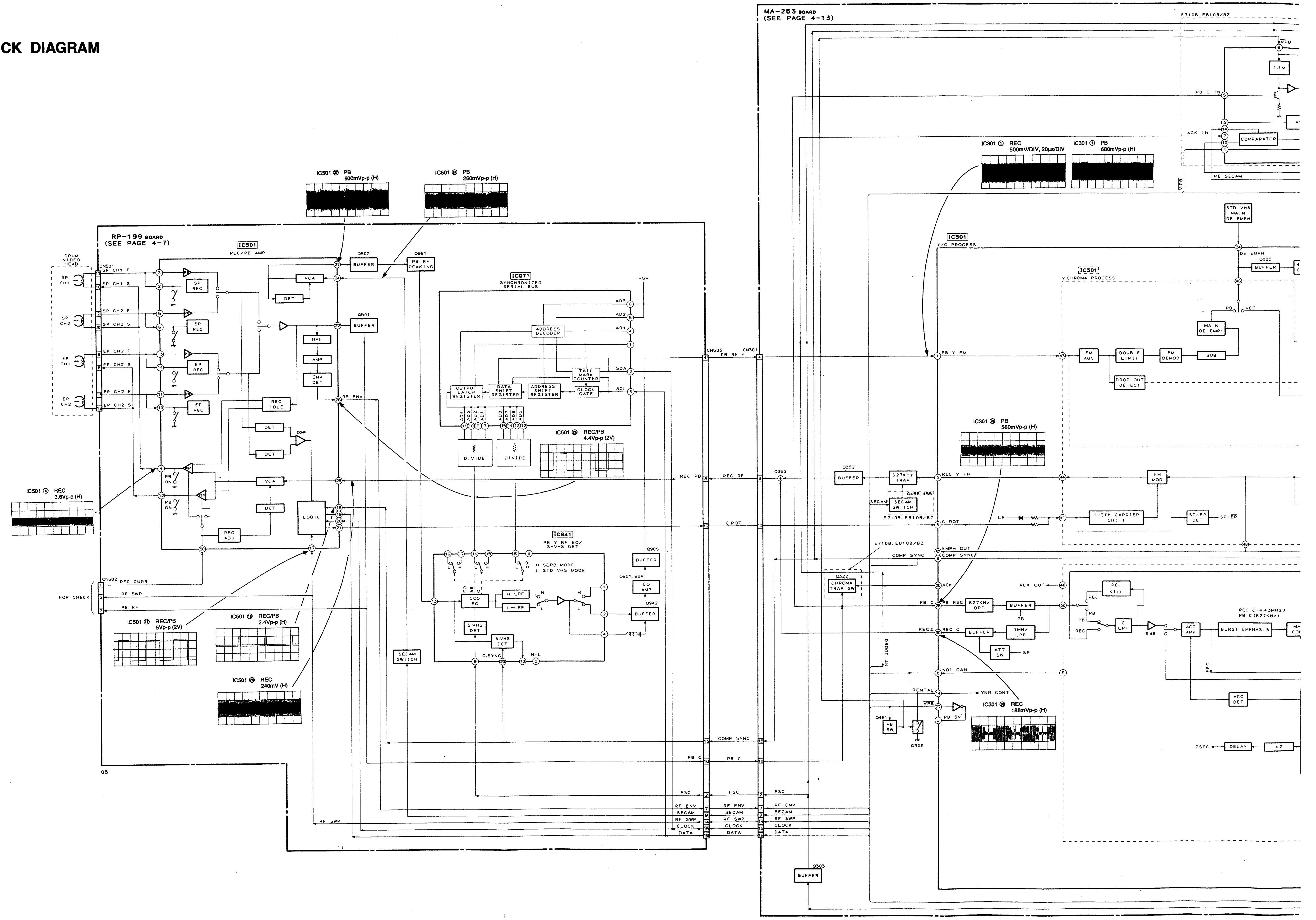
SECTION 3
BLOCK DIAGRAMS

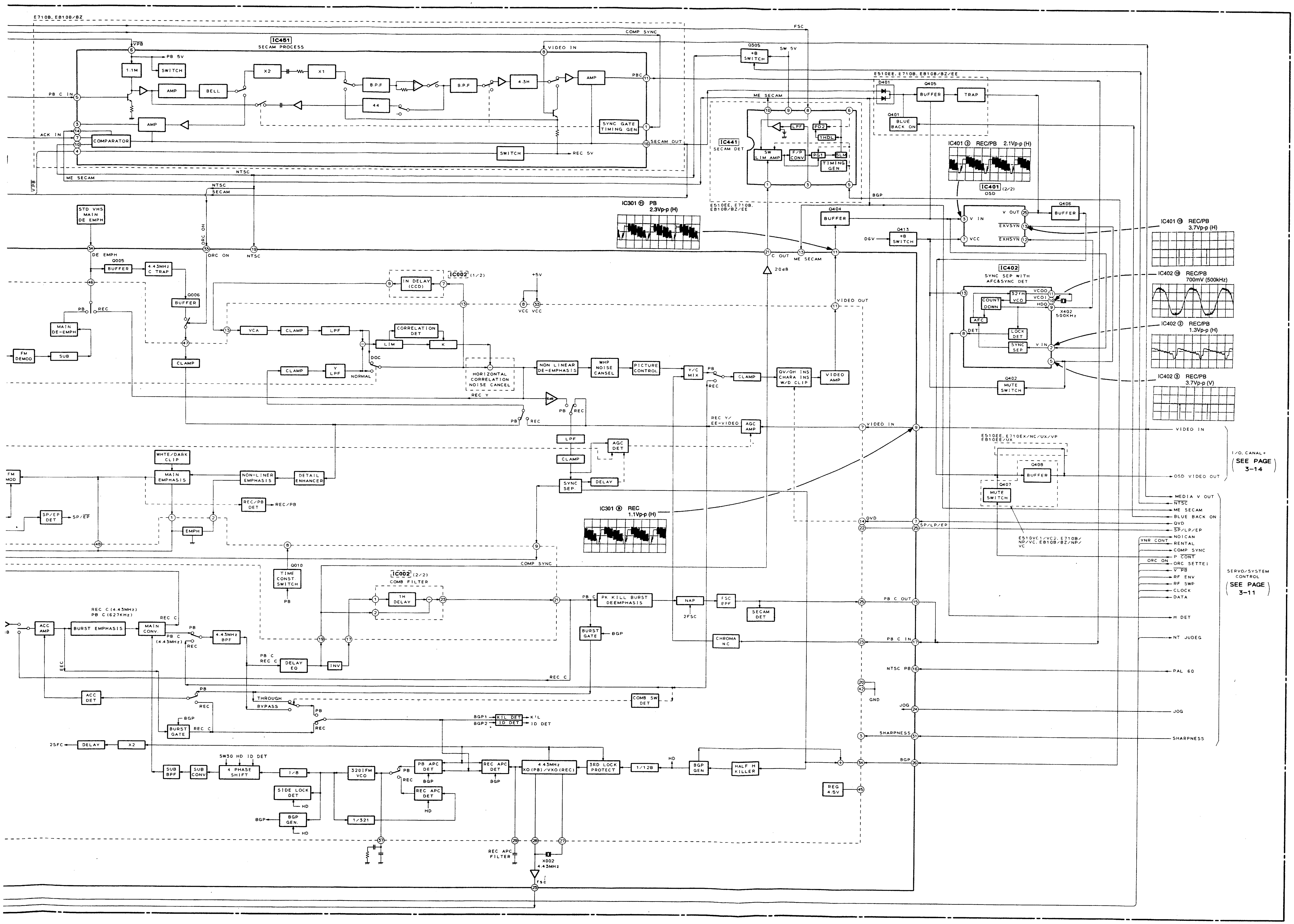
3-1. OVERALL BLOCK DIAGRAM


MA-253 BOARD
(SEE PAGE 4-13/18/23/26/29)
RP-199 BOARD
(SEE PAGE 4-7)
VIDEO HEAD
CH1
CH2
IC501
HEAD REC/PB AMP
RF SWP
REC Y/C
PB Y/C
IC301
Y/C PROCESS
VIDEO IN
VIDEO OUT
IC402
SYNC SEP WITH AFC&SYNC DET
IC401
OSD
MOD V
MEDIA V
IC131
EDS DATA SLICER
SIN
SCLK
EDS CS
EDS DAY
TV VIDEO
E510EE, E810EE
IC481
VIDEO SELECT
IC461
VIDEO SELECT
IC471
VIDEO I/O, C+ CONTROL
E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC
EXCEPT E510, E810EE
V IN
V OUT
L OUT
R OUT
CJ651 (2/2)
CANAL +
(LINE-3)
CJ601 (2/2)
EURO-AV
(LINE-1)
E510, E810
PJ301 (2/2)
VIDEO LINE-2 IN
E710, E810
CN621
AUDIO OUT
(LINE-2)
L
R
HiFi AUDIO HEAD
IC760
AFM REC/PB AMP
PB RF
REC RF
AF SWP
E710, E810
IC501
AUDIO PROCESS (HiFi)
AUDIO OUT (L/R)
MOD A
IC771
IC791
AUDIO I/O SELECT
E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC
E510
IC851
AUDIO PROCESS (NORMAL)
AUDIO OUT
SO1/SCLK
E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC
IC771
IC791
AUDIO I/O SELECT
TU AU (L/R)
E510
AUDIO OUT
TU703
TUNER
IC551
BIAS SWITCH
NORMAL
AUDIO REC/PB
AUDIO ERASE
FULL ERASE
Q881, T881
BIAS OSC
Q882, 886
SWITCH
NA REC P̄
E810
Q891, 892, T891
BIAS OSC
FULL ERS
CJ601 (1/2)
EURO-AV
(LINE-1)
L IN
R IN
CJ651 (1/2)
CANAL +
(LINE-3)
EXCEPT E510EE, E810EE
E710, E810
TU701
TUNER
RF701
IN
VHF/UHF
OUT
RF-MOD
MOD V
MOD A
NTSC TV/VTR
S251
(REC PRF)
TU DATA/CLOCK/ENABLE
IC153
EEP ROM
SO1/SCLK
SERIAL DATA BUS (S IN/S OUT/SCLK/EDS CS/EDS DAV)
IC151
IC201
IC201 DRUM SERVO
IC201 CAP SERVO
IC201 SYSTEM CONTROL
IC151 TUNER/TIMER MODE CONTROL
DRUM D/A
DRUM FG
CAP D/A
CAP FG
CTL R/P̄
CAM LOAD
CAM UNLOA
MODE 1-
POWER CON
REMOTE CO
DATA/S CL
SEG1-19/C
D261
Q262 S SENS
Q261 T SENS
D6V
IC152
POWER FAIL DET/RESET PULSE GENERATOR
E810
E510
PJ301 (1/2)
AUDIO LINE-2 IN
L
R
HI-25 BOARD (1/2)
(SEE PAGE 4-35)
PS-357 BOARD
(SEE PAGE 4-21)
+13V
+12V
D6V
+5V
-8V
SWITCHING REG
LINE FILTER
AC IN
05

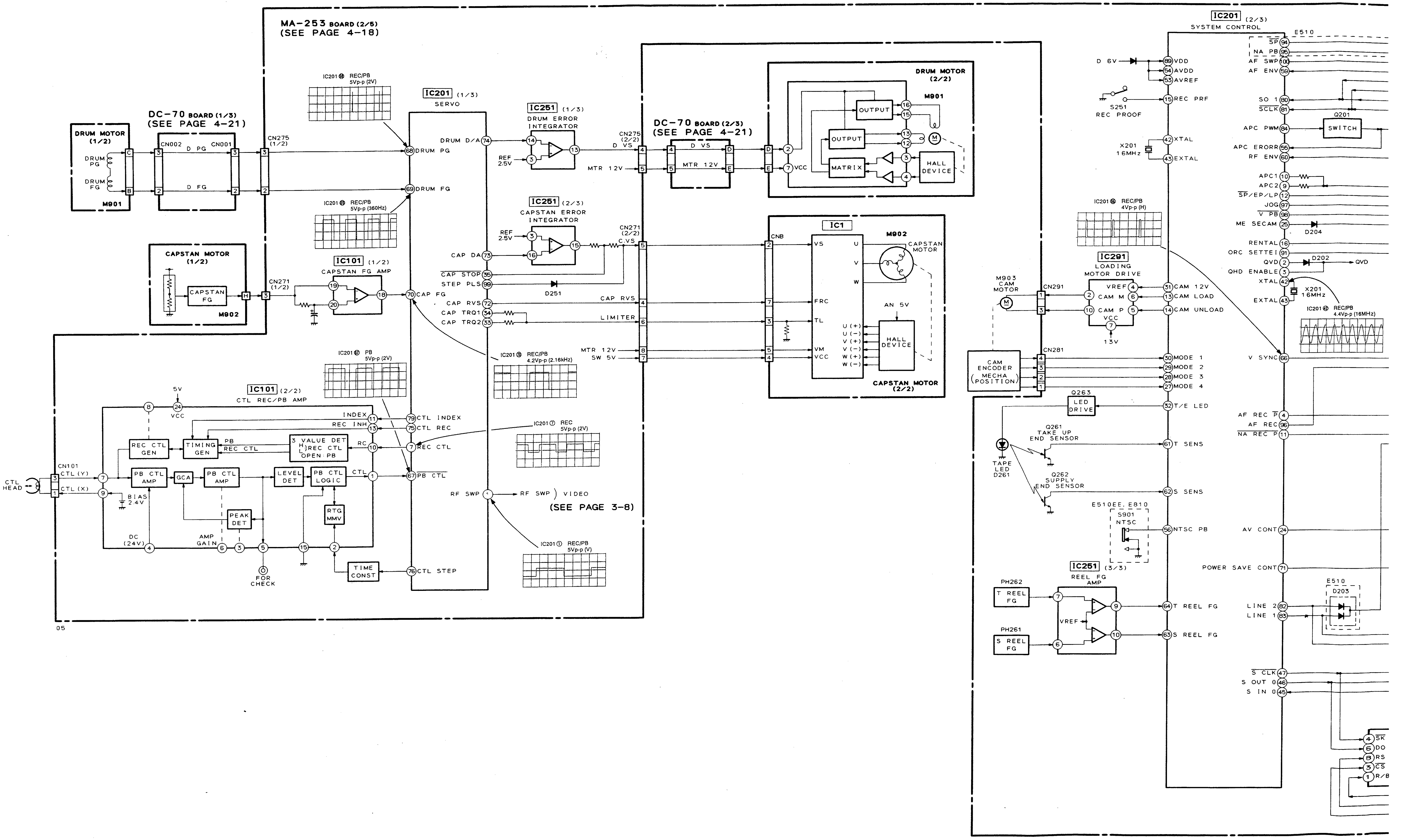

IC151
IC201
IC201
DRUM SERVO
IC201
CAP SERVO
IC201
SYSTEM
CONTROL
IC151
TUNER/TIMER
MODE CONTROL
DRUM D/A
DRUM FG
CAP D/A
CAP FG
CTL R/P
CAM LOAD
CAM UNLOAD
MODE 1-4
POWER CONT/POWER SW
REMOTE CONTROL IN
DATA/S CLK/LED CS/ASURA RESET
SEG1-19/GRID1-6
IC251 (1/2)
DRUM ERROR INTEGRATOR
IC251 (2/2)
CAPSTAN ERROR INTEGRATOR
IC101
CAPSTAN FG AMP
CTL REC/PB AMP
IC291
CAM MOTOR DRIVER
DC-70 BOARD
(SEE PAGE 4-21)
MD BLOCK
DRUM MOTOR
M
DRUM FG
CAP MOTOR
M
CAP FG
CTL HEAD
CAM MOTOR
M
CAM ENCORDER
MF-285 BOARD
(SEE PAGE 4-36)
E510, E810
IC201
REMOTE CONTROL RECEIVER
POWER CONT
POWER SW
POWER
STBY
S201
POWER
E710
IC301
REMOTE CONTROL RECEIVER
FLUORESCENT INDICATOR TUBE
SELECT SWITCH
HI-25 BOARD (2/2)
(SEE PAGE 4-35)
IC401
LED DRIVER
REC
REC STBY
E510, E810
SELECT SWITCH
DM-49 BOARD
(SEE PAGE 4-36)
OPERATING LED
LE-13 BOARD (E810)
(SEE PAGE 4-36)
S410
DUAL
MODE
SHUTTLE
E810
OPERATING SWITCH BLOCK

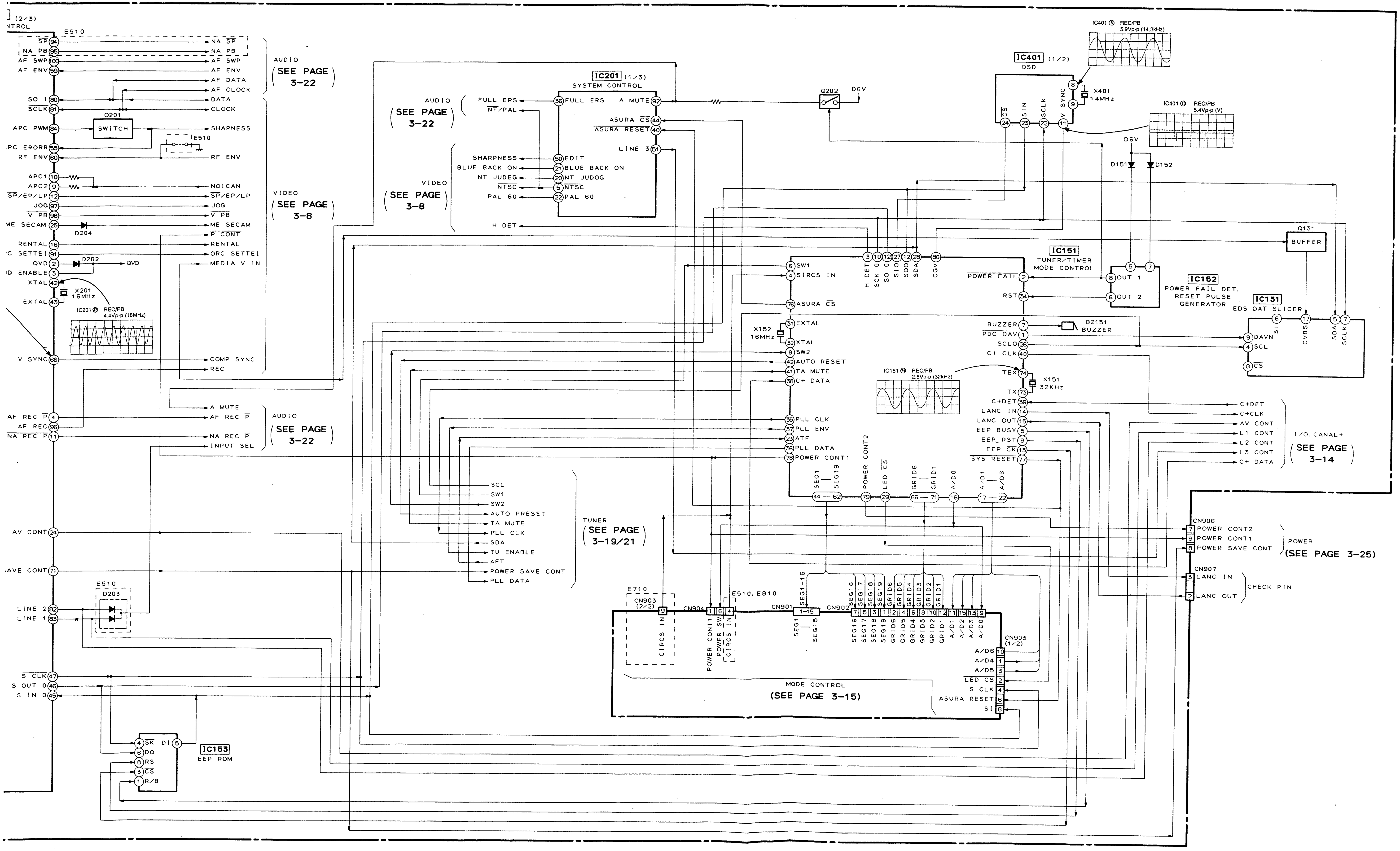
3-2. VIDEO BLOCK DIAGRAM


MA-253 BOARD
(SEE PAGE 4-13)
RP-199 BOARD
(SEE PAGE 4-7)
DRUM VIDEO HEAD
SP CH1
SP CH2
EP CH1
EP CH2
CN501
CN502
REC CURR
RF SWP
PB RF
FOR CHECK
IC501
REC/PB AMP
SP REC
EP REC
REC IDLE
VCA
DET
HPF
AMP
ENV DET
COMP
LOGIC
REC ADJ
Q502
BUFFER
Q961
PB RF PEAKING
Q501
RF ENV
IC971
SYNCHRONIZED SERIAL BUS
ADDRESS DECODER
TAIL MARK COUNTER
OUTPUT LATCH REGISTER
DATA SHIFT REGISTER
ADDRESS SHIFT REGISTER
CLOCK GATE
AD1
AD2
AD3
SDA
SCL
+5V
DIVIDE
IC941
PB Y RF EQ/ S-VHS DET
H SQPB MODE
L STD VHS MODE
CDS EQ
H-LPF
L-LPF
S.VHS DET
C.SYNC
H/L
Q905
Q901, 904
EQ AMP
Q942
SECAM SWITCH
IC501 ㉗ PB 600mVp-p (H)
IC501 ㉔ PB 260mVp-p (H)
IC501 ④ REC 3.6Vp-p (H)
IC501 ⑰ REC/PB 5Vp-p (2V)
IC501 ⑱ REC/PB 2.4Vp-p (H)
IC501 ㉘ REC 240mV (H)
IC501 ⑳ REC/PB 4.4Vp-p (2V)
CN503
CN301
PB RF Y
REC PB
REC RF
C.ROT
COMP SYNC
PB C
FSC
RF ENV
SECAM
RF SWP
CLOCK
DATA
Q353
Q352
627KHz TRAP
Q456, 455
SECAM SWITCH
E710B, E810B/BZ
Q322
CHROMA TRAP SW
IC301
Y/C PROCESS
Y CHROMA PROCESS
PB Y FM
REC Y FM
C ROT
EMPH OUT
ACK
PB C
PB REC
REC C
627KHz BPF
1MHz LPF
ATT SW
NT JUDEG
NOI CAN
RENTAL
YNR CONT
VPB
PB 5V
Q451
PB SW
Q306
Q303
IC301 ① REC 500mV/DIV, 20μs/DIV
IC301 ① PB 680mVp-p (H)
IC301 ③ PB 560mVp-p (H)
IC301 ㉚ REC 188mVp-p (H)
FM AGC
DOUBLE LIMIT
FM DEMOD
SUB
DROP OUT DETECT
MAIN DE-EMPH
STD VHS MAIN DE EMPH
DE EMPH
Q005
FM MOD
1/2fh CARRIER SHIFT
SP/EP DET
SP/EP
LP
ACK OUT
REC KILL
C LPF
6dB
ACC AMP
BURST EMPHASIS
ACC DET
REC C (4.43MHz)
PB C (627KHz)
2SFC
DELAY
x2
PB C IN
ACK IN
COMPARATOR
ME SECAM
1.1M
E710B, E810B/BZ

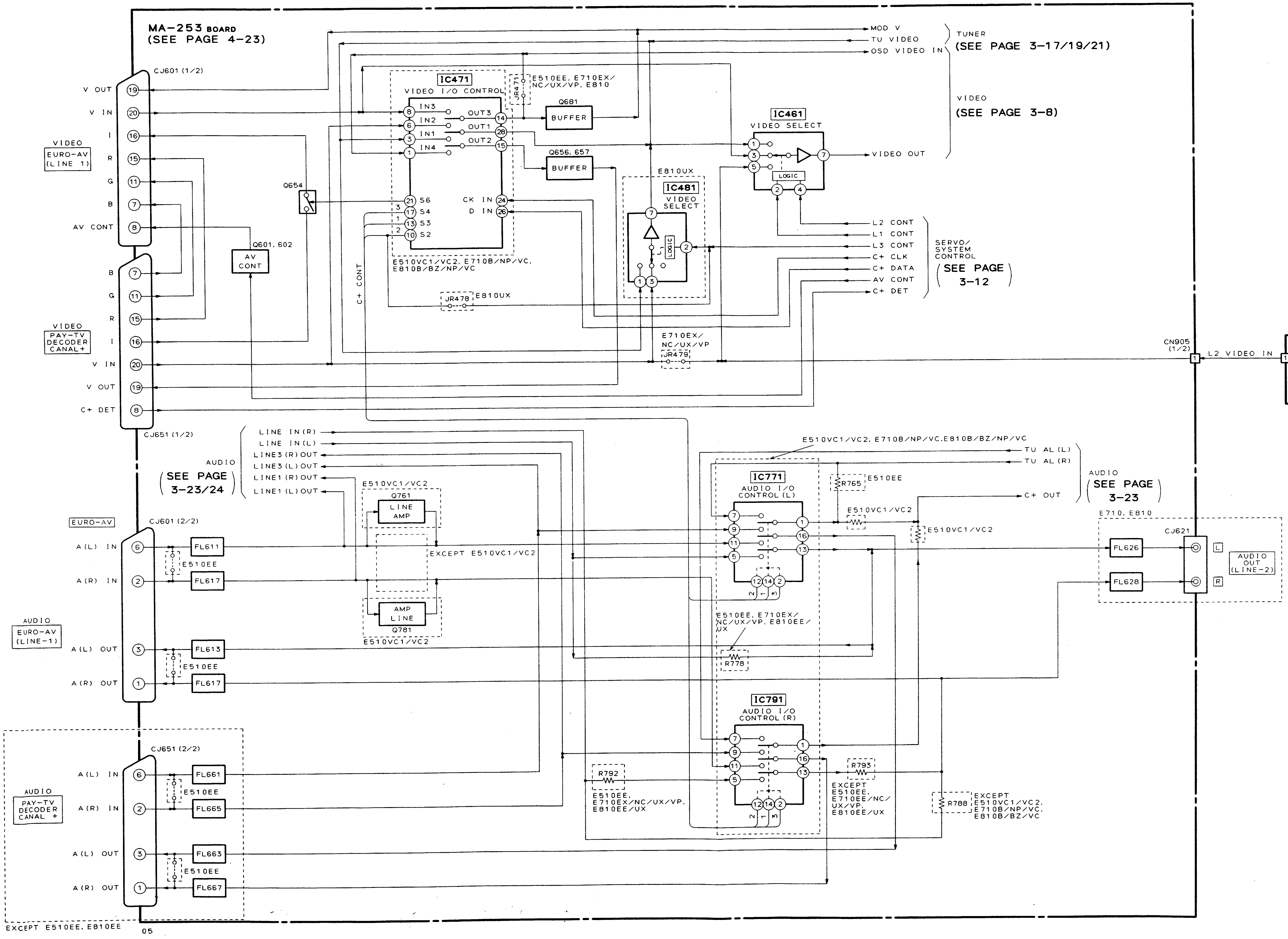

E710B, E810B/BZ
IC451
SECAM PROCESS
COMP SYNC
FSC
VPB
PB 5V
1.1M
SWITCH
X2
X1
AMP
BELL
B.P.F
4.3H
44
VIDEO IN
PBC
SYNC GATE TIMING GEN
SECAM OUT
PB C IN
ACK IN
COMPARATOR
REC 5V
ME SECAM
NTSC
SECAM
Q305
+B SWITCH
SW 5V
E510EE, E710B, E810B/BZ/EE
D401
Q405
BUFFER
TRAP
Q401
BLUE BACK ON
IC441
SECAM DET
SW LIM AMP
LPF
PD2
1HDL
F/P CONV
PG1
SLM
TIMING GEN
E510EE, E710B, E810B/BZ/EE
IC401 ③ REC/PB 2.1Vp-p (H)
IC401 (2/2)
OSD
Q406
BUFFER
V IN
V OUT
EXVSYN
VCC
EXHSYN
IC401 ⑬ REC/PB 3.7Vp-p (H)
IC301 ⑪ PB 2.3Vp-p (H)
Q404
BUFFER
Q413
+B SWITCH
D6V
BGP
STD VHS MAIN DE EMPH
DE EMPH
ORC ON
Q005
BUFFER
4.43MHz C TRAP
Q006
BUFFER
C OUT
ME SECAM
20dB
IC002 (1/2)
IN DELAY (CCD)
+5V
VCC VCC
VIDEO OUT
IC402
SYNC SEP WITH AFC&SYNC DET
32FH VCO
COUNT DOWN
AFC
DET
LOCK DET
SYNC SEP
VCOO
VCOI
HDO
X402 500KHz
IC402 ⑩ REC/PB 700mV (500kHz)
IC402 ② REC/PB 1.3Vp-p (H)
IC402 ⑤ REC/PB 3.7Vp-p (V)
PB REC
MAIN DE-EMPH
FM DEMOD
SUB
VCA
CLAMP
LPF
CORRELATION DET
LIM
K
DOC
NORMAL
Y LPF
HORIZONTAL CORRELATION NOISE CANCEL
NON LINEAR DE-EMPHASIS
WHP NOISE CANSEL
PICTURE CONTROL
Y/C MIX
QV/OH INS CHARA INS W/D CLIP
VIDEO AMP
Q402
MUTE SWITCH
REC Y
REC Y/EE-VIDEO
AGC AMP
VIDEO IN
AGC DET
SYNC SEP.
DELAY
WHITE/DARK CLIP
MAIN EMPHASIS
NON-LINER EMPHASIS
DETAIL ENHANCER
FM MOD
REC/PB DET
REC/PB
SP/EP DET
SP/EP
EMPH
IC301 ⑧ REC 1.1Vp-p (H)
E510EE, E710EX/NC/UX/VP E810EE/UX
Q408
BUFFER
Q407
MUTE SWITCH
E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC
VIDEO IN
I/O, CANAL+ (SEE PAGE 3-14)
OSD VIDEO OUT
MEDIA V OUT
NTSC
ME SECAM
BLUE BACK ON
QVD
SP/LP/EP
YNR CONT
NOICAN
RENTAL
COMP SYNC
P CONT
ORC ON
ORC SETTEI
V PB
RF ENV
RF SWP
CLOCK
DATA
SERVO/SYSTEM CONTROL (SEE PAGE 3-11)
H DET
NT JUDEG
PAL 60
JOG
SHARPNESS
Q010
TIME CONST SWITCH
IC002 (2/2)
COMB FILTER
1H DELAY
PB C
PK KILL BURST DEEMPHASIS
NAP
2FSC
FSC EPF
SECAM DET
BURST GATE
CHROMA NC
PB C OUT
PB C IN
NTSC PB
GND
SHARPNESS
REC C (4.43MHz)
PB C (627KHz)
ACC AMP
BURST EMPHASIS
MAIN CONV.
REC C
4.43MHz BPF
PB C (4.43MHz)
PB C REC C
DELAY EQ
INV
ACC DET
EEC
THROUGH
BYPASS
COMB SW DET
BGP1
BGP2
KIL DET
ID DET
K'L
BURST GATE
25FC
DELAY
X2
SW30 HD ID DET
SUB BPF
SUB CONV
4 PHASE SHIFT
1/8
SIDE LOCK DET
BGP GEN.
HD
320IFM VCO
1/321
PB APC DET
REC APC DET
4.43MHz XO(PB)/VXO(REC)
3RD LOCK PROTECT
1/128
BGP GEN
HALF H KILLER
REG 4.5V
REC APC FILTER
X002 4.43MHz
fsc

3-3. SERVO SYSTEM CONTROL BLOCK DIAGRAM

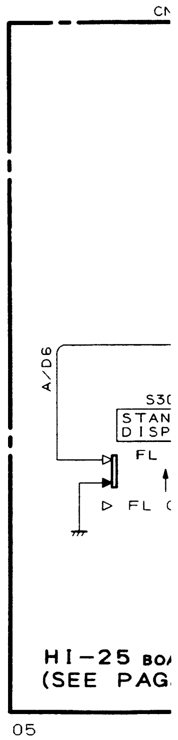

MA-253 BOARD (2/5)
(SEE PAGE 4-18)
DRUM MOTOR (1/2)
DRUM PG
DRUM FG
M901
DC-70 BOARD (1/3)
(SEE PAGE 4-21)
CN002
CN001
D PG
D FG
CN275 (1/2)
IC201 ⑱ REC/PB 5Vp-p (2V)
IC201 (1/3) SERVO
DRUM D/A 74
68 DRUM PG
69 DRUM FG
IC251 (1/3) DRUM ERROR INTEGRATOR
REF 2.5V
IC201 ⑨ REC/PB 5Vp-p (360Hz)
CAPSTAN MOTOR (1/2)
CAPSTAN FG
M902
CN271 (1/2)
IC101 (1/2) CAPSTAN FG AMP
IC251 (2/3) CAPSTAN ERROR INTEGRATOR
CAP DA 73
CAP STOP 35
STEP PLS 99
70 CAP FG
CAP RVS 72
CAP TRQ1 34
CAP TRQ2 33
D251
CN275 (2/2)
D VS
MTR 12V
CN271 (2/2)
C.VS
CAP RVS
LIMITER
MTR 12V
SW 5V
DC-70 BOARD (2/3)
(SEE PAGE 4-21)
DRUM MOTOR (2/2)
M901
OUTPUT
OUTPUT
MATRIX
HALL DEVICE
VCC
IC1
M902
CAPSTAN MOTOR
CNB
VS
FRC
TL
VM
VCC
U
V
W
U (+)
U (-)
V (+)
V (-)
W (+)
W (-)
AN 5V
HALL DEVICE
CAPSTAN MOTOR (2/2)
IC201 ⑲ PB 5Vp-p (2V)
IC201 ⑱ REC/PB 4.2Vp-p (2.16kHz)
5V
IC101 (2/2) CTL REC/PB AMP
VCC
INDEX
REC INH
79 CTL INDEX
75 CTL REC
REC CTL GEN
TIMING GEN
PB
REC CTL
3 VALUE DET
H REC CTL
L OPEN PB
RC
77 REC CTL
IC201 ⑦ REC 5Vp-p (2V)
CN101
CTL (Y)
CTL (X)
CTL HEAD
PB CTL AMP
GCA
PB CTL AMP
LEVEL DET
PB CTL LOGIC
CTL
67 PB CTL
BIAS 2.4V
PEAK DET
RTG MMV
DC (24V)
AMP GAIN
FOR CHECK
TIME CONST
76 CTL STEP
RF SWP
RF SWP) VIDEO
(SEE PAGE 3-8)
IC201 ① REC/PB 5Vp-p (V)
05
IC201 (2/3) SYSTEM CONTROL
E510
SP 94
NA PB 95
AF SWP 100
AF ENV 59
D 6V
89 VDD
54 AVDD
53 AVREF
S251 REC PROOF
15 REC PRF
X201 16MHz
42 XTAL
43 EXTAL
SO 1 80
SCLK 81
Q201 SWITCH
APC PWM 84
APC ERORR 55
RF ENV 60
APC1 10
APC2 9
SP/EP/LP 12
JOG 97
V PB 98
ME SECAM 25
D204
RENTAL 16
ORC SETTEI 91
QVD 2
D202
QVD
QHD ENABLE 3
XTAL 42
EXTAL 43
X201 16MHz
IC201 ㊷ REC/PB 4.4Vp-p (16MHz)
IC201 ⑯ REC/PB 4Vp-p (H)
IC291 LOADING MOTOR DRIVE
M903 CAM MOTOR
CN291
VREF
CAM M
CAM P
VCC
13V
31 CAM 12V
13 CAM LOAD
14 CAM UNLOAD
CN281
CAM ENCODER (MECHA POSITION)
30 MODE 1
29 MODE 2
28 MODE 3
27 MODE 4
V SYNC 66
Q263 LED DRIVE
32 T/E LED
Q261 TAKE UP END SENSOR
TAPE LED D261
Q262 SUPPLY END SENSOR
61 T SENS
62 S SENS
E510EE, E810
S901 NTSC
56 NTSC PB
AF REC P 4
AF REC 96
NA REC P 11
AV CONT 24
POWER SAVE CONT 71
IC251 (3/3) REEL FG AMP
PH262 T REEL FG
PH261 S REEL FG
VREF
64 T REEL FG
63 S REEL FG
E510
D203
LINE 2 82
LINE 1 83
S CLK 47
S OUT 46
S IN 45
SK
DO
RS
CS
R/B


(2/3)
NTROL
E510
SP 94
NA PB 95
AF SWP 100
AF ENV 58
SO 1 80
SCLK 81
APC PWM 84
PC ERORR 55
RF ENV 60
APC1 10
APC2 9
SP/EP/LP 12
JOG 97
V PB 98
ME SECAM 25
RENTAL 16
C SETTEI 91
QVD 2
D ENABLE 3
XTAL 42
EXTAL 43
X201 16MHz
IC201 42 REC/PB 4.4Vp-p (16MHz)
V SYNC 66
AF REC P 4
AF REC 96
NA REC P 11
AV CONT 24
SAVE CONT 71
LINE 2 82
LINE 1 83
S CLK 47
S OUT 0 46
S IN 0 45
Q201 SWITCH
E510
D204
D202
E510 D203
NA SP
NA PB
AF SWP
AF ENV
AF DATA
AF CLOCK
DATA
CLOCK
SHAPNESS
RF ENV
NOICAN
SP/EP/LP
JOG
V PB
ME SECAM
P CONT
RENTAL
ORC SETTEI
MEDIA V IN
QVD
COMP SYNC
REC
A MUTE
AF REC P
NA REC P
INPUT SEL
AUDIO (SEE PAGE 3-22)
VIDEO (SEE PAGE 3-8)
AUDIO (SEE PAGE 3-22)
AUDIO (SEE PAGE 3-22)
FULL ERS
NT/PAL
VIDEO (SEE PAGE 3-8)
SHARPNESS
BLUE BACK ON
NT JUDEG
NTSC
PAL 60
H DET
IC201 (1/3) SYSTEM CONTROL
36 FULL ERS
A MUTE 92
ASURA CS 44
ASURA RESET 40
LINE 3 51
50 EDIT
21 BLUE BACK ON
20 NT JUDOG
5 NTSC
22 PAL 60
Q202
D6V
IC401 (1/2) OSD
CS 24
SIN 23
SCLK 22
V SYNC 11
8
9
X401 14MHz
IC401 8 REC/PB 5.9Vp-p (14.3kHz)
IC401 11 REC/PB 5.4Vp-p (V)
D6V
D151
D152
Q131 BUFFER
IC151 TUNER/TIMER MODE CONTROL
H DET 3
SCK 0 10
SO 0 11
SIO 12
SOO 27
SDA 28
CGV 80
6 SW1
4 SIRCS IN
76 ASURA CS
31 EXTAL
X152 16MHz
32 XTAL
8 SW2
42 AUTO RESET
41 TA MUTE
38 C+ DATA
35 PLL CLK
37 PLL ENV
23 ATF
36 PLL DATA
78 POWER CONT1
POWER FAIL 2
RST 34
BUZZER 7
PDC DAV 1
SCLO 26
C+ CLK 40
TEX 74
TX 73
X151 32KHz
IC151 74 REC/PB 2.5Vp-p (32kHz)
C+DET 39
LANC IN 14
LANC OUT 15
EEP BUSY 5
EEP RST 9
EEP CK 13
SYS RESET 77
SEG1 — SEG19 44 — 62
POWER CONT2 79
LED CS 29
GRID6 — GRID1 66 — 71
A/D0 16
A/D1 — A/D6 17 — 22
IC152 POWER FAIL DET. RESET PULSE GENERATOR
8 OUT 1
6 OUT 2
5
7
BZ151 BUZZER
IC131 EDS DAT SLICER
6 SI
17 CVBS
5 SDA
7 SCLK
9 DAVN
4 SCL
8 CS
C+DET
C+CLK
AV CONT
L1 CONT
L2 CONT
L3 CONT
C+ DATA
I/O, CANAL+ (SEE PAGE 3-14)
SCL
SW1
SW2
AUTO PRESET
TA MUTE
PLL CLK
SDA
TU ENABLE
AFT
POWER SAVE CONT
PLL DATA
TUNER (SEE PAGE 3-19/21)
CN906
7 POWER CONT2
9 POWER CONT1
8 POWER SAVE CONT
POWER (SEE PAGE 3-25)
CN907
3 LANC IN
2 LANC OUT
CHECK PIN
E710
CN903 (2/2)
9 CIRCS IN
CN904
1 POWER CONT1
6 POWER SW
4 CIRCS IN
E510, E810
CN901 1-15
SEG1-15
SEG1 SEG15
CN902
SEG16 SEG17 SEG18 SEG19 GRID6 GRID5 GRID4 GRID3 GRID2 GRID1 A/D1 A/D2 A/D3 A/D0
7 5 3 1 2 4 6 8 10 12 11 15 13 9
CN903 (1/2)
A/D6 10
A/D4 1
A/D5 3
LED CS 2
S CLK 4
ASURA RESET 6
SI 8
MODE CONTROL (SEE PAGE 3-15)
IC153 EEP ROM
4 SK
6 DO
8 RS
3 CS
1 R/B
DI 5

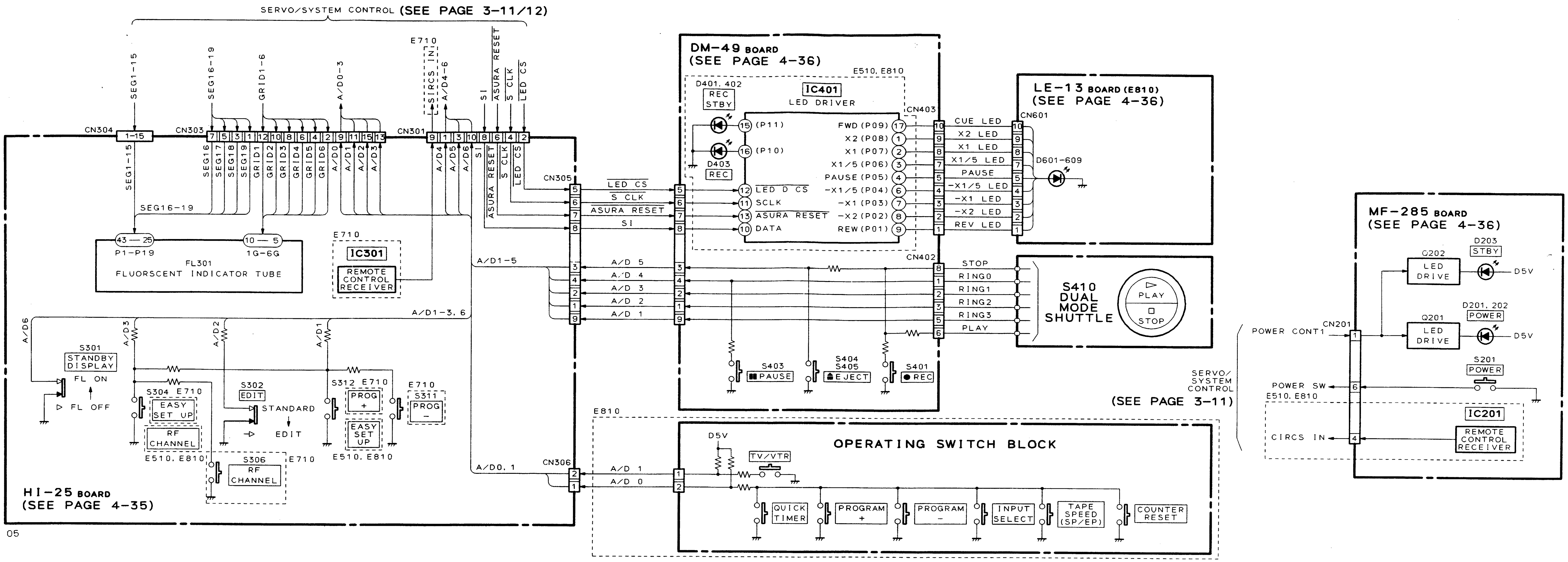
3-4. IO/CANAL+ BLOCK DIAGRAM


MA-253 BOARD
(SEE PAGE 4-23)
CJ601 (1/2)
V OUT
V IN
I
R
G
B
AV CONT
VIDEO
EURO-AV
(LINE 1)
VIDEO
PAY-TV
DECODER
CANAL+
C+ DET
CJ651 (1/2)
Q654
Q601, 602
AV CONT
IC471
VIDEO I/O CONTROL
IN3
IN2
IN1
IN4
OUT3
OUT1
OUT2
S6
S4
S3
S2
CK IN
D IN
E510VC1/VC2, E710B/NP/VC,
E810B/BZ/NP/VC
JR471
E510EE, E710EX/
NC/UX/VP, E810
Q681
BUFFER
Q656, 657
BUFFER
C+ CONT
JR478
E810UX
IC481
VIDEO SELECT
LOGIC
E710EX/
NC/UX/VP
JR479
IC461
VIDEO SELECT
LOGIC
MOD V
TU VIDEO
OSD VIDEO IN
TUNER
(SEE PAGE 3-17/19/21)
VIDEO
(SEE PAGE 3-8)
VIDEO OUT
L2 CONT
L1 CONT
L3 CONT
C+ CLK
C+ DATA
AV CONT
C+ DET
SERVO/
SYSTEM
CONTROL
(SEE PAGE 3-12)
CN905 (1/2)
L2 VIDEO IN
CN302 (1/2)
HI-25 BOARD
(SEE PAGE 3-35)
PJ301
LINE-2
IN
VIDEO
LINE IN(R)
LINE IN(L)
LINE3(R)OUT
LINE3(L)OUT
LINE1(R)OUT
LINE1(L)OUT
AUDIO
(SEE PAGE 3-23/24)
E510VC1/VC2, E710B/NP/VC,E810B/BZ/NP/VC
TU AL(L)
TU AL(R)
C+ OUT
AUDIO
(SEE PAGE 3-23)
EURO-AV
CJ601 (2/2)
A(L) IN
A(R) IN
A(L) OUT
A(R) OUT
FL611
FL617
FL613
FL617
E510EE
AUDIO
EURO-AV
(LINE-1)
E510VC1/VC2
Q761
LINE AMP
EXCEPT E510VC1/VC2
AMP LINE
Q781
E510VC1/VC2
IC771
AUDIO I/O
CONTROL (L)
R765
E510EE
E510VC1/VC2
E510EE, E710EX/
NC/UX/VP, E810EE/
UX
R778
E710, E810
CJ621
FL626
FL628
AUDIO
OUT
(LINE-2)
L
R
CJ651 (2/2)
FL661
FL665
FL663
FL667
AUDIO
PAY-TV
DECODER
CANAL +
EXCEPT E510EE, E810EE
R792
E510EE,
E710EX/NC/UX/VP,
E810EE/UX
IC791
AUDIO I/O
CONTROL (R)
R793
EXCEPT
E510EE,
E710EE/NC/
UX/VP,
E810EE/UX
R788
EXCEPT
E510VC1/VC2,
E710B/NP/VC,
E810B/BZ/VC
05

3-5. MOD

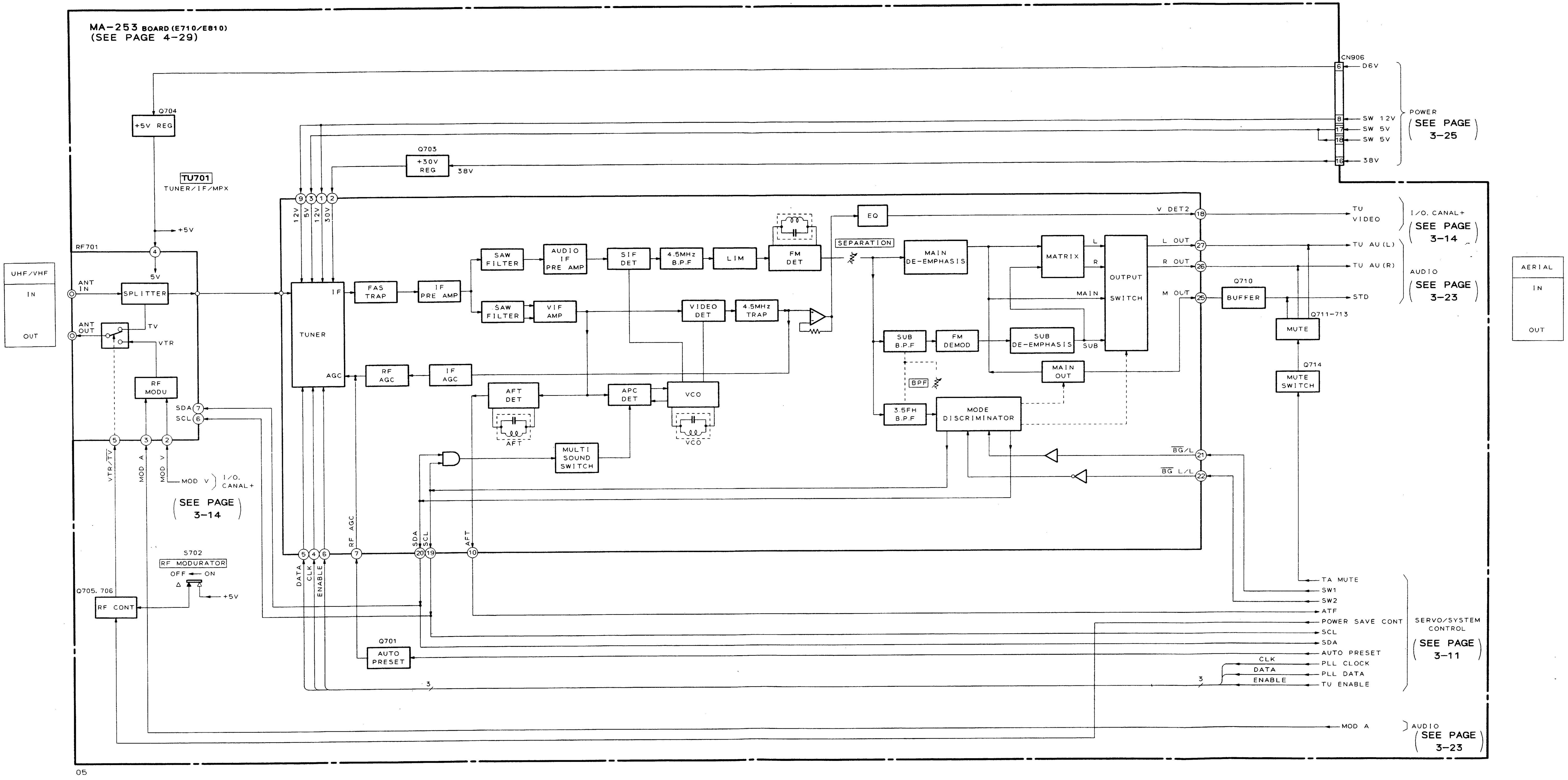

A/D6
S30
STAN
DISP
FL
FL
HI-25 BOA
(SEE PAG
05

3-5. MODE CONTROL BLOCK DIAFRAM

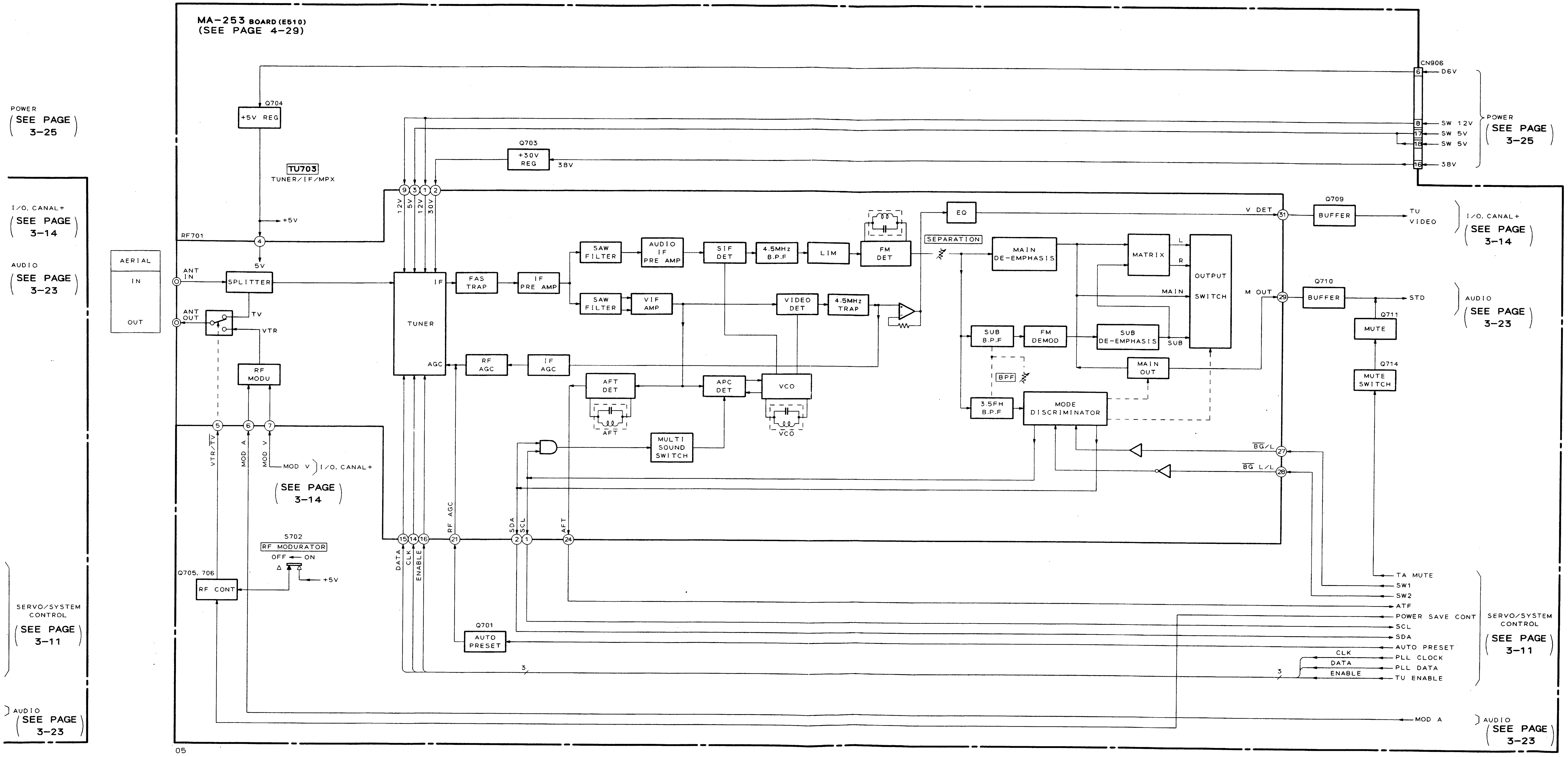

SERVO/SYSTEM CONTROL (SEE PAGE 3-11/12)
SEG1-15
SEG16-19
GRID1-6
A/D0-3
E710
SIRCS IN
A/D4-6
SI
ASURA RESET
S CLK
LED CS
CN304
CN303
CN301
SEG16 SEG17 SEG18 SEG19
GRID1 GRID2 GRID3 GRID4 GRID5 GRID6
A/D0 A/D1 A/D2 A/D3
A/D4 A/D5 A/D6
SEG16-19
43 — 25
10 — 5
P1-P19
1G-6G
FL301
FLUORSCENT INDICATOR TUBE
IC301
REMOTE CONTROL RECEIVER
A/D1-5
A/D1-3, 6
A/D6
A/D3
A/D2
A/D1
S301
STANDBY DISPLAY
FL ON
FL OFF
S304 E710
EASY SET UP
RF CHANNEL
E510, E810
S302
EDIT
STANDARD
EDIT
S306
RF CHANNEL
E710
S312 E710
PROG +
EASY SET UP
E510, E810
S311
PROG -
A/D0, 1
CN305
CN306
HI-25 BOARD
(SEE PAGE 4-35)
05
LED CS
S CLK
ASURA RESET
SI
A/D 5
A/D 4
A/D 3
A/D 2
A/D 1
A/D 1
A/D 0
DM-49 BOARD
(SEE PAGE 4-36)
E510, E810
D401, 402
REC STBY
IC401
LED DRIVER
D403
REC
(P11)
(P10)
LED D CS
SCLK
ASURA RESET
DATA
FWD (P09)
X2 (P08)
X1 (P07)
X1/5 (P06)
PAUSE (P05)
-X1/5 (P04)
-X1 (P03)
-X2 (P02)
REW (P01)
CN403
CN402
CUE LED
X2 LED
X1 LED
X1/5 LED
PAUSE
-X1/5 LED
-X1 LED
-X2 LED
REV LED
STOP
RING0
RING1
RING2
RING3
PLAY
S403
PAUSE
S404
S405
EJECT
S401
REC
LE-13 BOARD (E810)
(SEE PAGE 4-36)
CN601
D601-609
S410
DUAL MODE SHUTTLE
PLAY
STOP
E810
OPERATING SWITCH BLOCK
D5V
TV/VTR
QUICK TIMER
PROGRAM +
PROGRAM -
INPUT SELECT
TAPE SPEED (SP/EP)
COUNTER RESET
MF-285 BOARD
(SEE PAGE 4-36)
D203
STBY
Q202
LED DRIVE
D5V
D201, 202
POWER
Q201
LED DRIVE
D5V
S201
POWER
IC201
REMOTE CONTROL RECEIVER
CN201
POWER CONT1
POWER SW
E510, E810
CIRCS IN
SERVO/SYSTEM CONTROL
(SEE PAGE 3-11)

3-6. TUNER BLOCK DIAGRAM

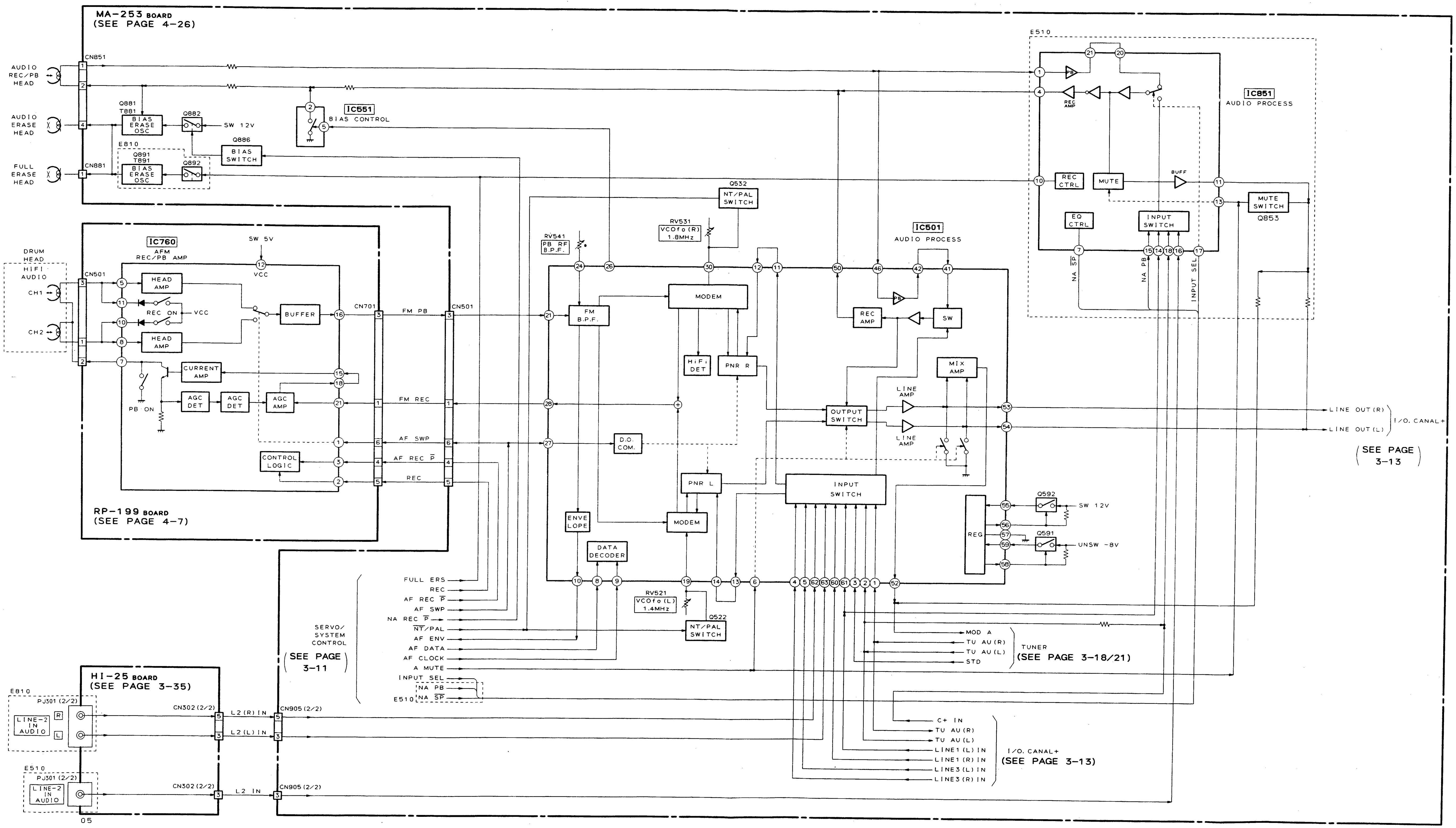
Hi-Fi Model (SLV-E710/E810)


MA-253 BOARD (E710/E810)
(SEE PAGE 4-29)
CN906
D6V
SW 12V
SW 5V
SW 5V
38V
POWER
(SEE PAGE 3-25)
Q704
+5V REG
Q703
+30V REG
38V
TU701
TUNER/IF/MPX
+5V
RF701
5V
UHF/VHF
IN
OUT
ANT IN
SPLITTER
ANT OUT
TV
VTR
RF MODU
SDA
SCL
VTR/TV
MOD A
MOD V
MOD V
I/O. CANAL+
(SEE PAGE 3-14)
S702
RF MODURATOR
OFF ON
+5V
Q705, 706
RF CONT
12V
5V
12V
30V
TUNER
IF
AGC
FAS TRAP
IF PRE AMP
SAW FILTER
AUDIO IF PRE AMP
SAW FILTER
VIF AMP
RF AGC
IF AGC
SIF DET
4.5MHz B.P.F
LIM
FM DET
VIDEO DET
4.5MHz TRAP
AFT DET
AFT
APC DET
VCO
VCO
MULTI SOUND SWITCH
EQ
SEPARATION
MAIN DE-EMPHASIS
MATRIX
L
R
OUTPUT SWITCH
MAIN
SUB
SUB B.P.F
FM DEMOD
SUB DE-EMPHASIS
MAIN OUT
BPF
3.5FH B.P.F
MODE DISCRIMINATOR
V DET2
L OUT
R OUT
M OUT
BG/L
BG L/L
DATA
CLK
ENABLE
RF AGC
SDA
SCL
AFT
Q701
AUTO PRESET
3
Q710
BUFFER
Q711-713
MUTE
Q714
MUTE SWITCH
TU VIDEO
TU AU(L)
TU AU(R)
STD
I/O. CANAL+
(SEE PAGE 3-14)
AUDIO
(SEE PAGE 3-23)
AERIAL
IN
OUT
TA MUTE
SW1
SW2
ATF
POWER SAVE CONT
SCL
SDA
AUTO PRESET
CLK
DATA
ENABLE
PLL CLOCK
PLL DATA
TU ENABLE
SERVO/SYSTEM CONTROL
(SEE PAGE 3-11)
MOD A
AUDIO
(SEE PAGE 3-23)
05

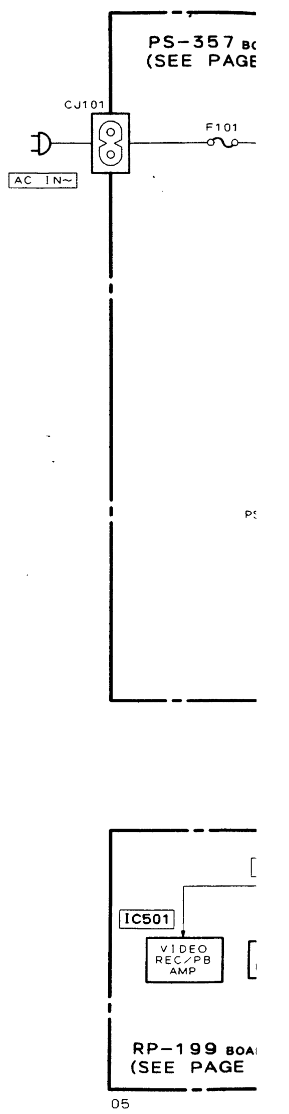
Normal Model (SLV-E510)


MA-253 BOARD (E510)
(SEE PAGE 4-29)
POWER
(SEE PAGE 3-25)
I/O, CANAL+
(SEE PAGE 3-14)
AUDIO
(SEE PAGE 3-23)
SERVO/SYSTEM CONTROL
(SEE PAGE 3-11)
AUDIO
(SEE PAGE 3-23)
AERIAL
IN
OUT
ANT IN
ANT OUT
RF701
Q704
+5V REG
TU703
TUNER/IF/MPX
+5V
5V
SPLITTER
TV
VTR
RF MODU
Q703
+30V REG
38V
12V
5V
12V
30V
TUNER
IF
AGC
FAS TRAP
IF PRE AMP
SAW FILTER
AUDIO IF PRE AMP
SIF DET
4.5MHz B.P.F
LIM
FM DET
SAW FILTER
VIF AMP
VIDEO DET
4.5MHz TRAP
RF AGC
IF AGC
AFT DET
AFT
APC DET
VCO
MULTI SOUND SWITCH
EQ
SEPARATION
MAIN DE-EMPHASIS
MATRIX
L
R
MAIN
OUTPUT SWITCH
SUB B.P.F
FM DEMOD
SUB DE-EMPHASIS
SUB
BPF
MAIN OUT
3.5FH B.P.F
MODE DISCRIMINATOR
V DET
M OUT
BG/L
BG L/L
Q709
BUFFER
TU VIDEO
Q710
BUFFER
STD
Q711
MUTE
Q714
MUTE SWITCH
CN906
D6V
SW 12V
SW 5V
SW 5V
38V
VTR/TV
MOD A
MOD V
MOD V
I/O, CANAL+
(SEE PAGE 3-14)
S702
RF MODURATOR
OFF ON
+5V
Q705, 706
RF CONT
DATA
CLK
ENABLE
RF AGC
SDA
SCL
AFT
Q701
AUTO PRESET
3
TA MUTE
SW1
SW2
ATF
POWER SAVE CONT
SCL
SDA
AUTO PRESET
CLK
PLL CLOCK
DATA
PLL DATA
ENABLE
TU ENABLE
MOD A
05

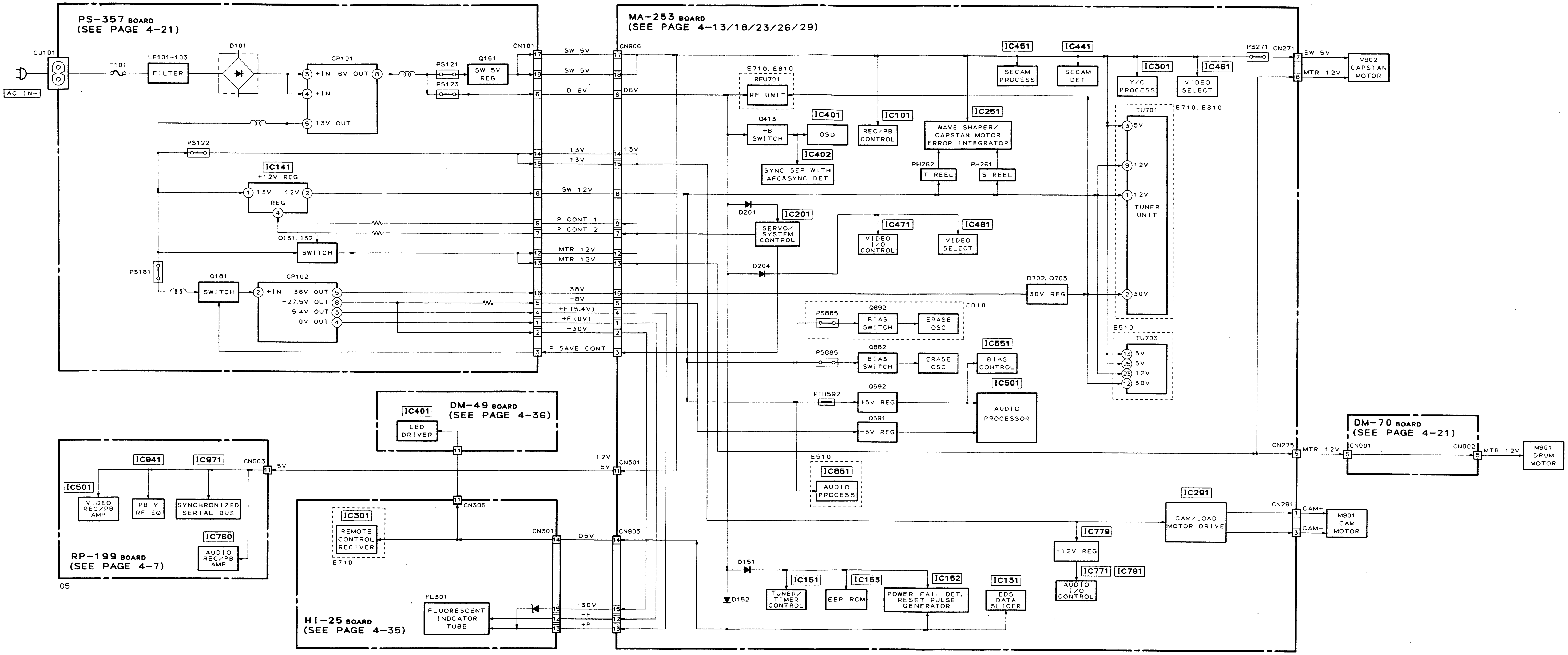
3-7. AUDIO BLOCK DIAGRAM


MA-253 BOARD
(SEE PAGE 4-26)
AUDIO REC/PB HEAD
AUDIO ERASE HEAD
FULL ERASE HEAD
CN851
CN881
Q881
T881
BIAS ERASE OSC
Q882
SW 12V
E810
Q891
T891
Q892
Q886
BIAS SWITCH
IC551
BIAS CONTROL
Q532
NT/PAL SWITCH
RV531
VCOfo(R)
1.8MHz
RV541
PB RF B.P.F.
IC501
AUDIO PROCESS
E510
IC851
AUDIO PROCESS
REC AMP
REC CTRL
MUTE
BUFF
EQ CTRL
INPUT SWITCH
MUTE SWITCH
Q853
NA SP
NA PB
INPUT SEL
DRUM HEAD
HIFI AUDIO
CH1
CH2
CN501
IC760
AFM REC/PB AMP
SW 5V
VCC
HEAD AMP
REC ON
BUFFER
CURRENT AMP
AGC DET
AGC AMP
PB ON
CONTROL LOGIC
RP-199 BOARD
(SEE PAGE 4-7)
CN701
FM PB
FM REC
AF SWP
AF REC P̄
REC
FM B.P.F.
MODEM
HiFi DET
PNR R
PNR L
REC AMP
SW
MIX AMP
LINE AMP
OUTPUT SWITCH
D.O. COM.
ENVE LOPE
DATA DECODER
INPUT SWITCH
REG
Q592
SW 12V
Q591
UNSW -8V
RV521
VCOfo(L)
1.4MHz
Q522
NT/PAL SWITCH
LINE OUT(R)
LINE OUT(L)
I/O. CANAL+
(SEE PAGE 3-13)
FULL ERS
REC
AF REC P̄
AF SWP
NA REC P̄
NT/PAL
AF ENV
AF DATA
AF CLOCK
A MUTE
INPUT SEL
NA PB
NA SP
E510
SERVO/ SYSTEM CONTROL
(SEE PAGE 3-11)
MOD A
TU AU(R)
TU AU(L)
STD
TUNER
(SEE PAGE 3-18/21)
C+ IN
TU AU(R)
TU AU(L)
LINE1(L)IN
LINE1(R)IN
LINE3(L)IN
LINE3(R)IN
I/O. CANAL+
(SEE PAGE 3-13)
HI-25 BOARD
(SEE PAGE 3-35)
E810
PJ301 (2/2)
LINE-2 IN AUDIO
R
L
CN302 (2/2)
L2(R)IN
L2(L)IN
CN905 (2/2)
E510
PJ301 (2/2)
LINE-2 IN AUDIO
L2 IN
05

3-8. POWE


PS-357 B
(SEE PAGE
CJ101
AC IN~
F101
IC501
VIDEO REC/PB AMP
RP-199 BOA
(SEE PAGE
05

3-8. POWER SUPPLY BLOCK DIAGRAM


PS-357 BOARD
(SEE PAGE 4-21)
CJ101
AC IN~
F101
LF101-103
FILTER
D101
CP101
+IN 6V OUT
+IN
13V OUT
PS121
PS123
Q161
SW 5V REG
CN101
PS122
IC141
+12V REG
13V 12V
REG
Q131, 132
SWITCH
PS181
Q181
SWITCH
CP102
+IN 38V OUT
-27.5V OUT
5.4V OUT
0V OUT
SW 5V
SW 5V
D 6V
13V
13V
SW 12V
P CONT 1
P CONT 2
MTR 12V
MTR 12V
38V
-8V
+F (5.4V)
+F (0V)
-30V
P SAVE CONT
MA-253 BOARD
(SEE PAGE 4-13/18/23/26/29)
CN906
D6V
13V
E710, E810
RFU701
RF UNIT
Q413
+B SWITCH
IC401
OSD
IC402
SYNC SEP WITH AFC&SYNC DET
IC101
REC/PB CONTROL
IC251
WAVE SHAPER/ CAPSTAN MOTOR ERROR INTEGRATOR
PH262
T REEL
PH261
S REEL
IC451
SECAM PROCESS
IC441
SECAM DET
IC301
Y/C PROCESS
IC461
VIDEO SELECT
TU701
E710, E810
5V
12V
12V
TUNER UNIT
30V
D201
IC201
SERVO/ SYSTEM CONTROL
IC471
VIDEO I/O CONTROL
IC481
VIDEO SELECT
D204
D702, Q703
30V REG
E810
PS885
Q892
BIAS SWITCH
ERASE OSC
PS885
Q882
BIAS SWITCH
ERASE OSC
IC551
BIAS CONTROL
E510
TU703
5V
5V
12V
30V
IC501
AUDIO PROCESSOR
PTH592
Q592
+5V REG
Q591
-5V REG
E510
IC851
AUDIO PROCESS
PS271
CN271
SW 5V
MTR 12V
M902 CAPSTAN MOTOR
CN275
MTR 12V
DM-70 BOARD
(SEE PAGE 4-21)
CN001
CN002
MTR 12V
M901 DRUM MOTOR
IC291
CAM/LOAD MOTOR DRIVE
CN291
CAM+
CAM-
M901 CAM MOTOR
IC779
+12V REG
IC771
IC791
AUDIO I/O CONTROL
D151
D152
IC151
TUNER/ TIMER CONTROL
IC153
EEP ROM
IC152
POWER FAIL DET. RESET PULSE GENERATOR
IC131
EDS DATA SLICER
DM-49 BOARD
(SEE PAGE 4-36)
IC401
LED DRIVER
12V
5V
CN301
RP-199 BOARD
(SEE PAGE 4-7)
IC941
IC971
CN503
5V
IC501
VIDEO REC/PB AMP
PB Y RF EQ
SYNCHRONIZED SERIAL BUS
IC760
AUDIO REC/PB AMP
05
HI-25 BOARD
(SEE PAGE 4-35)
CN305
IC301
REMOTE CONTROL RECIVER
E710
CN301
D5V
CN903
FL301
FLUORESCENT INDCATOR TUBE
-30V
-F
+F

SECTIONN 4
PRINTED WIRNIG BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS. (In addition to this, the necessary note is printed in each block.)

For printed wiring boards:

- ○—— : indicates a lead wire mounted on the component side.
- ●—— : indicates a lead wire mounted on the printed side.
- ● : Through hole.
- ■ : Parts mounted on the conductor side.
- ░ : Pattern from the side which enables seeing.
- ▒ : Pattern of the rear side.
- Circled numbers refer to waveforms.

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

For schematic diagram:

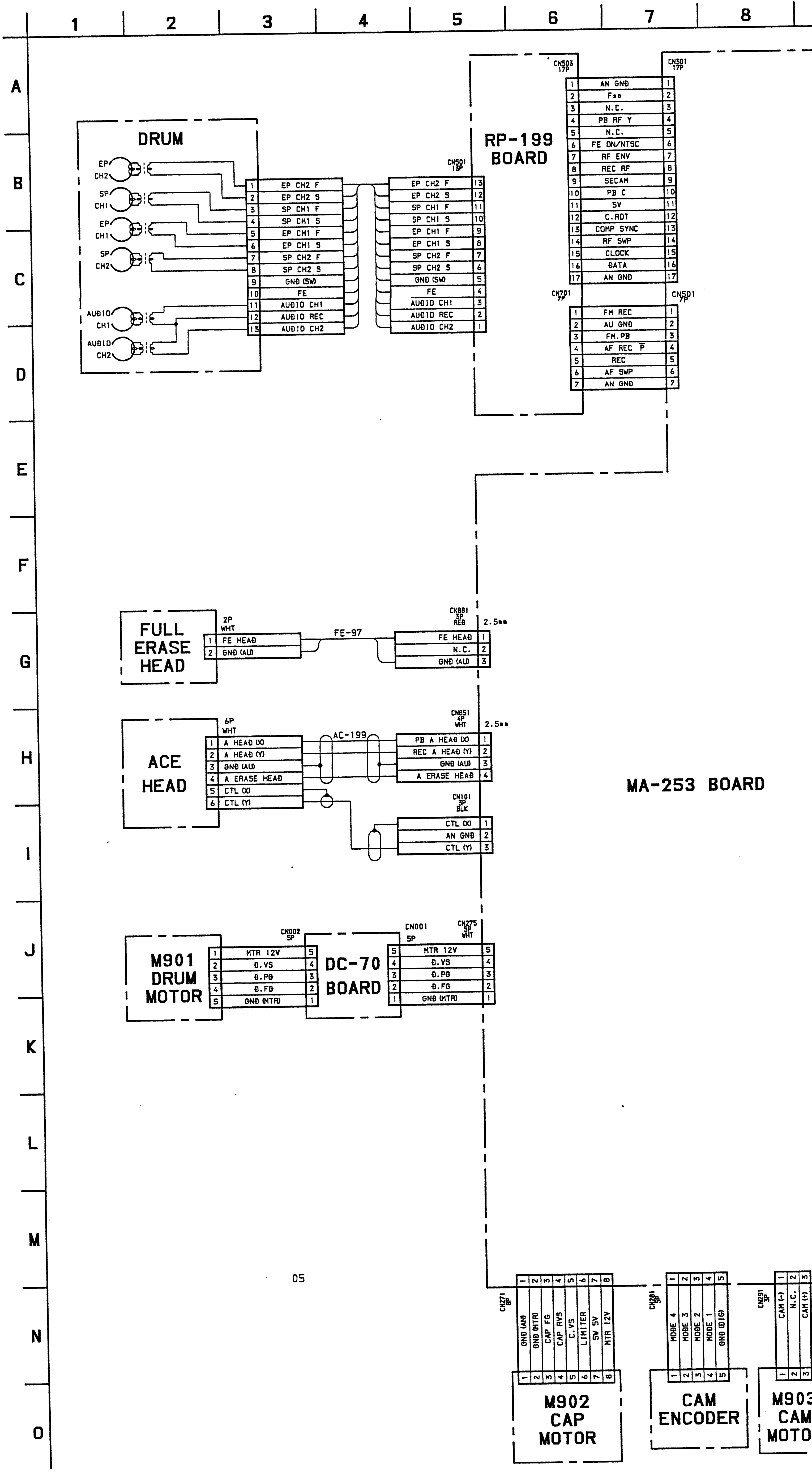
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W (Chip resistors: 1/10W) unless otherwise noted.
  kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF: μμF 50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- ▭ : panel designation.
- △ : internal component.
- ▭ : adjustment for repair.*
- ━━━ : B + Line.*
- ━ ━ ━ : B − Line.*
- ⇨ : IN/OUT direction of B line (+, −).
- Circled numbers refer to waveforms.*
- Voltages are dc between measurement point.*
- Readings are taken with a color-bar signal input.*
- Readings are taken with a digital multimeter (DC10MΩ).*
- Voltage are taken with a VOM (Input impedance 10MΩ).*
- Voltage variations may be noted due to normal production tolerances.*

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- * : Indicated by the color red.

4-1. FRAME SCHEMATIC DIAGRAM


1
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7
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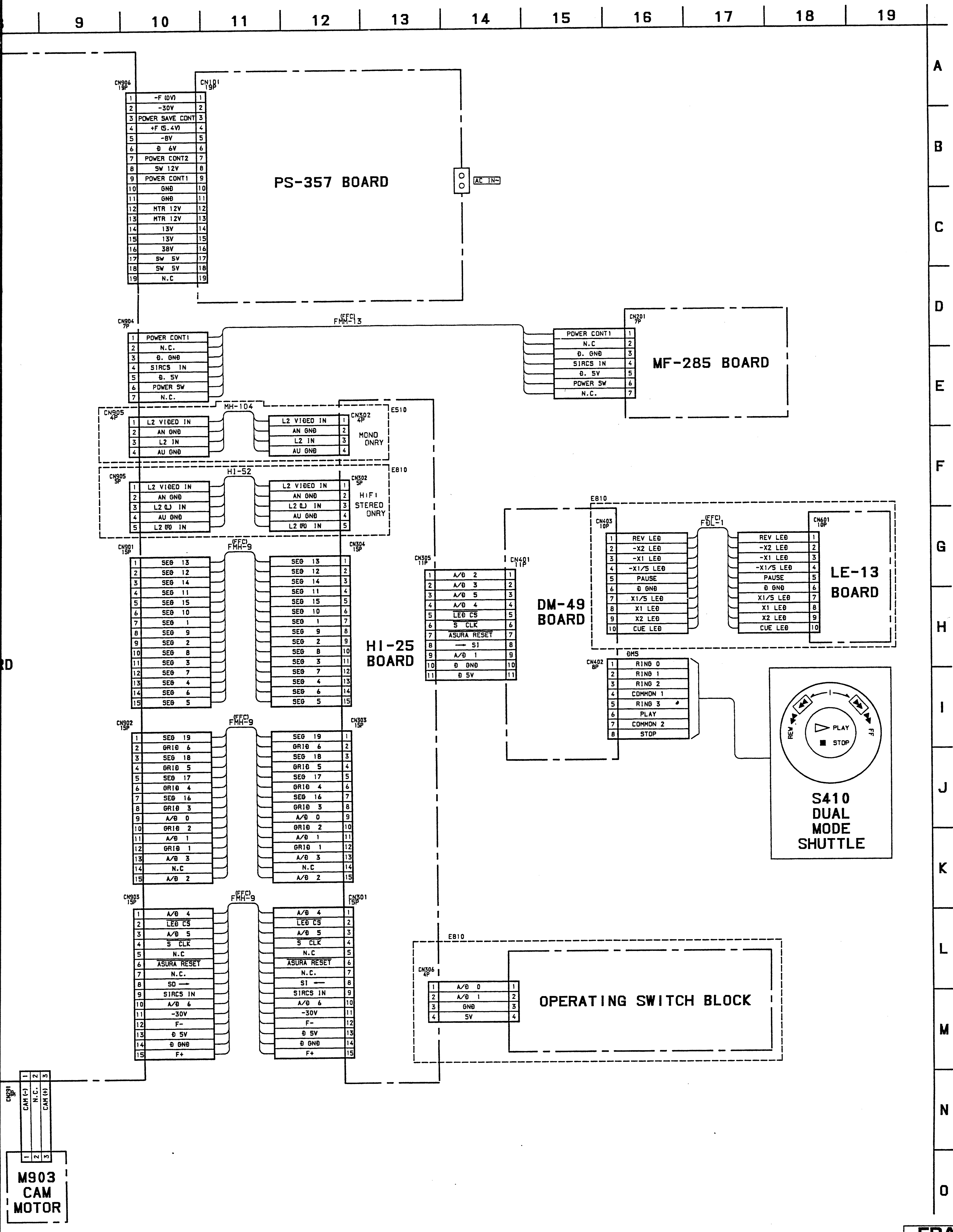
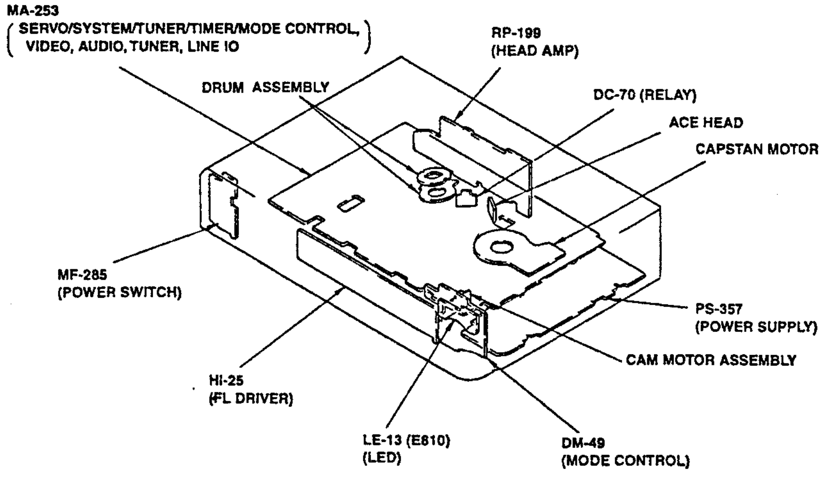
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
DRUM
EP CH2
SP CH1
EP CH1
SP CH2
AUDIO CH1
AUDIO CH2
EP CH2 F
EP CH2 S
SP CH1 F
SP CH1 S
EP CH1 F
EP CH1 S
SP CH2 F
SP CH2 S
GND (SW)
FE
AUDIO CH1
AUDIO REC
AUDIO CH2
CN501 13P
RP-199 BOARD
CN503 17P
CN301 17P
AN GND
Fsc
N.C.
PB RF Y
FE ON/NTSC
RF ENV
REC RF
SECAM
PB C
5V
C.ROT
COMP SYNC
RF SWP
CLOCK
DATA
CN701 7P
CN501 7P
FM REC
AU GND
FM.PB
AF REC P̄
REC
AF SWP
FULL ERASE HEAD
2P WHT
FE HEAD
GND (AU)
FE-97
CN881 3P RED
2.5mm
ACE HEAD
6P WHT
A HEAD (X)
A HEAD (Y)
A ERASE HEAD
CTL (X)
CTL (Y)
AC-199
CN851 4P WHT
PB A HEAD (X)
REC A HEAD (Y)
CN101 3P BLK
MA-253 BOARD
M901 DRUM MOTOR
CN002 5P
MTR 12V
Ð.VS
Ð.PG
Ð.FG
GND (MTR)
DC-70 BOARD
CN001 5P
CN275 5P WHT
05
CN271 8P
GND (AN)
CAP FG
CAP RVS
C.VS
LIMITER
SW 5V
M902 CAP MOTOR
CN281 5P
MODE 4
MODE 3
MODE 2
MODE 1
GND (DIG)
CAM ENCODER
CN291 3P
CAM (-)
CAM (+)
M903 CAM MOTO


9
10
11
12
13
14
15
16
17
18
19
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
CN906 19P
1 -F (0V)
2 -30V
3 POWER SAVE CONT
4 +F (5.4V)
5 -8V
6 D 6V
7 POWER CONT2
8 SW 12V
9 POWER CONT1
10 GND
11 GND
12 MTR 12V
13 MTR 12V
14 13V
15 13V
16 38V
17 SW 5V
18 SW 5V
19 N.C
CN101 19P
PS-357 BOARD
AC IN~
CN904 7P
(FFC) FMM-13
1 POWER CONT1
2 N.C.
3 D. GND
4 SIRCS IN
5 D. 5V
6 POWER SW
7 N.C.
CN201 7P
MF-285 BOARD
MH-104
CN905 4P
1 L2 VIDEO IN
2 AN GND
3 L2 IN
4 AU GND
CN302 4P
E510
MONO ONRY
HI-52
CN905 5P
1 L2 VIDEO IN
2 AN GND
3 L2 (L) IN
4 AU GND
5 L2 (R) IN
CN302 5P
E810
HIFI STEREO ONRY
CN901 15P
(FFC) FMH-9
CN304 15P
1 SEG 13
2 SEG 12
3 SEG 14
4 SEG 11
5 SEG 15
6 SEG 10
7 SEG 1
8 SEG 9
9 SEG 2
10 SEG 8
11 SEG 3
12 SEG 7
13 SEG 4
14 SEG 6
15 SEG 5
HI-25 BOARD
CN902 15P
(FFC) FMH-9
CN303 15P
1 SEG 19
2 GRID 6
3 SEG 18
4 GRID 5
5 SEG 17
6 GRID 4
7 SEG 16
8 GRID 3
9 A/D 0
10 GRID 2
11 A/D 1
12 GRID 1
13 A/D 3
14 N.C
15 A/D 2
CN903 15P
(FFC) FMH-9
CN301 15P
1 A/D 4
2 LED CS
3 A/D 5
4 S CLK
5 N.C
6 ASURA RESET
7 N.C.
8 SO →
9 SIRCS IN
10 A/D 6
11 -30V
12 F-
13 D 5V
14 D GND
15 F+
8 SI ←
CN305 11P
CN401 11P
1 A/D 2
2 A/D 3
3 A/D 5
4 A/D 4
5 LED CS
6 S CLK
7 ASURA RESET
8 → SI
9 A/D 1
10 D GND
11 D 5V
DM-49 BOARD
E810
CN403 10P
(FFC) FDL-1
CN601 10P
1 REV LED
2 -X2 LED
3 -X1 LED
4 -X1/5 LED
5 PAUSE
6 D GND
7 X1/5 LED
8 X1 LED
9 X2 LED
10 CUE LED
LE-13 BOARD
CN402 8P
DMS
1 RING 0
2 RING 1
3 RING 2
4 COMMON 1
5 RING 3
6 PLAY
7 COMMON 2
8 STOP
REW
PLAY
STOP
FF
S410 DUAL MODE SHUTTLE
E810
CN306 4P
1 A/D 0
2 A/D 1
3 GND
4 5V
OPERATING SWITCH BLOCK
CN291 3P
1 CAM (-)
2 N.C.
3 CAM (+)
M903 CAM MOTOR
RD

FRAME

RP-199 BOARD

CN501	B-4
CN502	C-2
CN503	A-3
CN701	A-7
D901	B-7
IC501	B-3
IC760	B-5
IC941	C-7
IC971	A-1
Q501	B-2
Q502	B-3
Q503	A-3
Q901	B-6
Q904	B-6
Q905	B-7
Q942	B-7
Q961	C-7


MA-253
(SERVO/SYSTEM/TUNER/TIMER/MODE CONTROL, VIDEO, AUDIO, TUNER, LINE IO)
RP-199
(HEAD AMP)
DRUM ASSEMBLY
DC-70 (RELAY)
ACE HEAD
CAPSTAN MOTOR
MF-285
(POWER SWITCH)
PS-357
(POWER SUPPLY)
CAM MOTOR ASSEMBLY
HI-25
(FL DRIVER)
LE-13 (E810)
(LED)
DM-49
(MODE CONTROL)

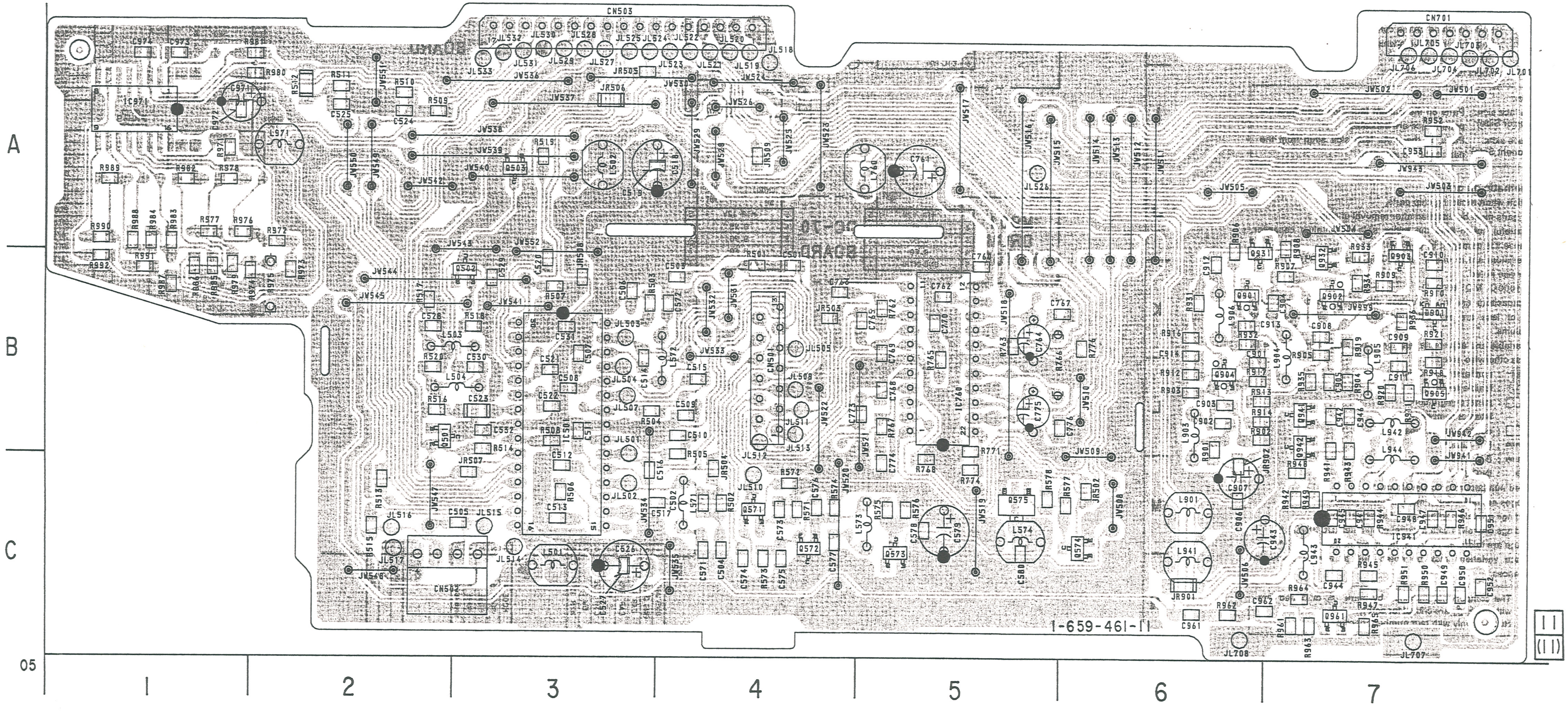
4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

There are cases that the part isn't mounted in this model is printed on this diagram.

PR-199 (HEAD AMP) PRINTED WIRING BOARD

– Ref. No.: RP-199 Board; 1,000 series –

RP-199 BOARD


CN503
CN701
CN502
CN501
IC971
IC501
IC941
IC760
Q501
Q502
Q503
Q571
Q572
Q573
Q574
Q575
Q901
Q902
Q903
Q904
Q905
Q931
Q932
Q941
Q942
Q961
L971
L501
L503
L504
L760
L901
L941
L942
L943
L944
1-659-461-11
A
B
C
1
2
3
4
5
6
7
05

- Signal path

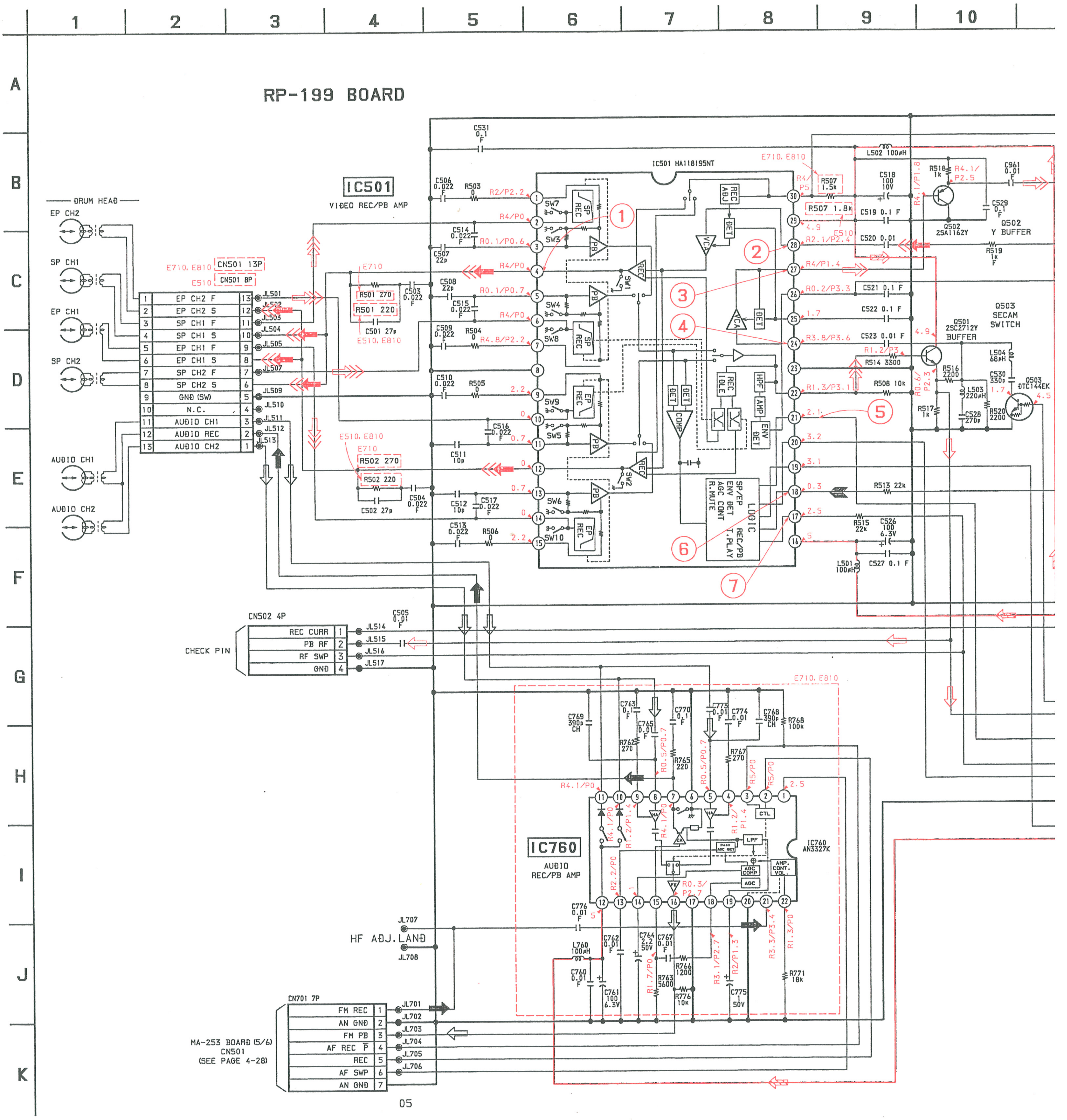
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	⇒	⇛
PB	⇨	⇨	⇨

- Signal path

	REC
Ref. signal	➤

PR-199 (HEAD AMP) SCHEMATIC DIAGRAM

– Ref. No.: RP-199 Board; 1,000 series –



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A
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E
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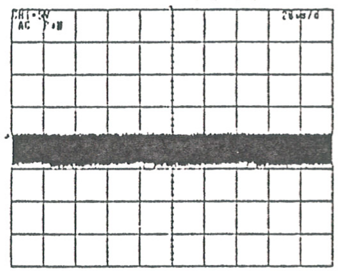
G
H
I
J
K
RP-199 BOARD
IC501
VIDEO REC/PB AMP
IC501 HA118195NT
DRUM HEAD
EP CH2
SP CH1
EP CH1
SP CH2
AUDIO CH1
AUDIO CH2
E710, E810
CN501 13P
E510
CN501 8P
EP CH2 F
EP CH2 S
SP CH1 F
SP CH1 S
EP CH1 F
EP CH1 S
SP CH2 F
SP CH2 S
GND (SW)
N.C.
AUDIO CH1
AUDIO REC
AUDIO CH2
JL501
JL502
JL503
JL504
JL505
JL507
JL509
JL510
JL511
JL512
JL513
R501 270
R501 220
C501 27p
E510, E810
R502 270
R502 220
C502 27p
C503 0.022
C504 0.022
C506 0.022
R503 0
C507 22p
C508 22p
C509 0.022
R504 0
C510 0.022
R505 0
C511 10p
C512 10p
C513 0.022
R506 0
C514 0.022
C515 0.022
C516 0.022
C517 0.022
C531 0.1
SW1
SW2
SW3
SW4
SW5
SW6
SW7
SW8
SW9
SW10
SP REC
EP REC
PB
REC
VCA
DET
REC ADJ
COMP
HPF
AMP
ENV DET
REC IDLE
SP/EP
ENV DET
AGC CONT
R.MUTE
LOGIC
REC/PB
T.PLAY
R507 1.5k
R507 1.8k
L502 100μH
C518 100 10V
R518 1k
C519 0.1
C520 0.01
C521 0.1
C522 0.1
C523 0.01
C529 0.1
C961 0.01
Q502 2SA1162Y
Q502 Y BUFFER
R519 1k
Q501 2SC2712Y BUFFER
Q503 SECAM SWITCH
Q503 DTC144EK
R514 3300
R516 2200
R508 10k
R517 1k
L504 68μH
C530 330p
L503 220μH
C528 270p
R520 2200
R513 22k
R515 22k
C526 100 6.3V
C527 0.1
L501 100μH
CN502 4P
CHECK PIN
REC CURR
PB RF
RF SWP
GND
JL514
JL515
JL516
JL517
C505 0.01
IC760
AUDIO REC/PB AMP
IC760 AN3327K
C769 390p CH
C763 0.01
C765 0.01
C770 0.1
C773 0.01
C774 0.01
C768 390p CH
R768 100k
R762 270
R765 220
R767 270
CTL
LPF
AGC COMP
AGC
AMP CONT. VOL.
JL707
HF ADJ. LAND
JL708
C776 0.01
L760 100mH
C760 0.01
C761 100 6.3V
C762 0.01
C764 2.2 50V
C767 0.01
R766 1200
R763 5600
R776 10k
C775 50V
R771 18k
CN701 7P
MA-253 BOARD (5/6)
CN501
(SEE PAGE 4-28)
FM REC
AN GND
FM PB
AF REC P
REC
AF SWP
AN GND
JL701
JL702
JL703
JL704
JL705
JL706

GNAL	AUDIO SIGNAL
Y/CHROMA	
➡	➡
⇨	⇨

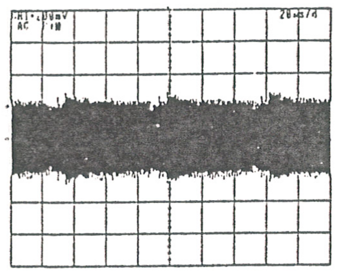
	REC	REC/PB	PB
	➤		

• Waveforms

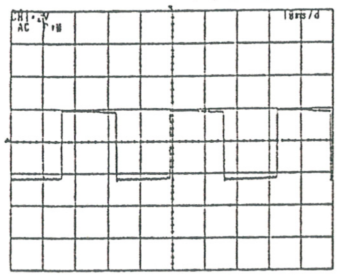
❶ IC501 ④ REC 3.6Vp-p (H)



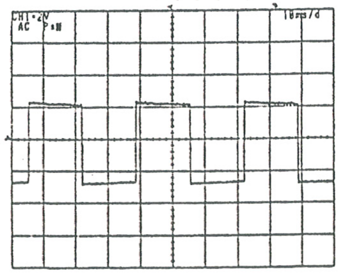
❸ IC501 ㉗ PB 600mVp-p (H)



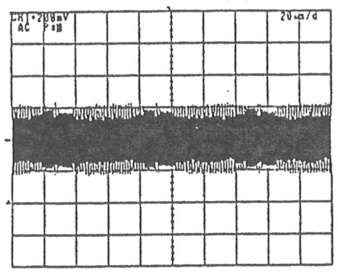
❺ IC501 ㉖ REC/PB 4.4Vp-p (2V)



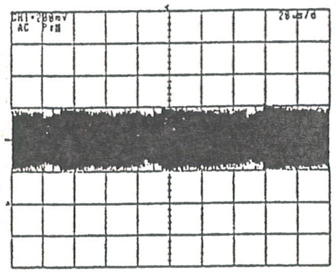
❼ IC501 ⑰ REC/PB 5Vp-p (2V)



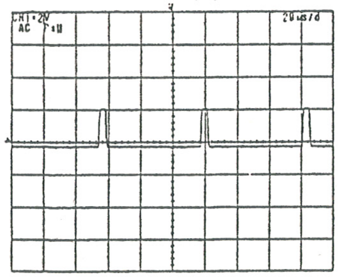
❷ IC501 ㉘ REC 240mV (H)

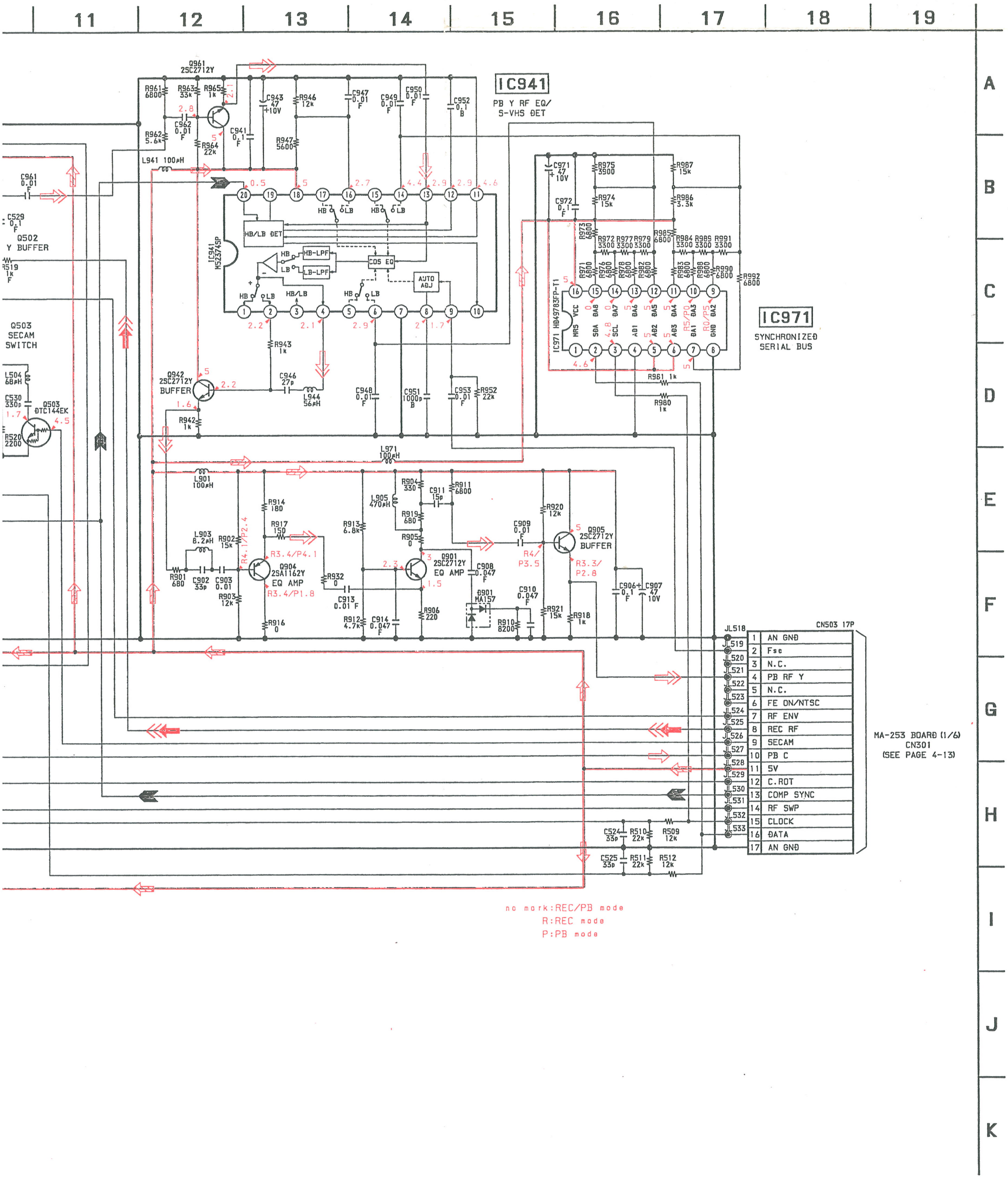


❹ IC501 ㉔ PB 260mVp-p (H)



❻ IC501 ⑱ REC/PB 2.4Vp-p (H)





JL518	1	AN GND
JL519	2	Fsc
JL520	3	N.C.
JL521	4	PB RF Y
JL522	5	N.C.
JL523	6	FE ON/NTSC
JL524	7	RF ENV
JL525	8	REC RF
JL526	9	SECAM
JL527	10	PB C
JL528	11	5V
JL529	12	C.ROT
JL530	13	COMP SYNC
JL531	14	RF SWP
JL532	15	CLOCK
JL533	16	DATA
	17	AN GND

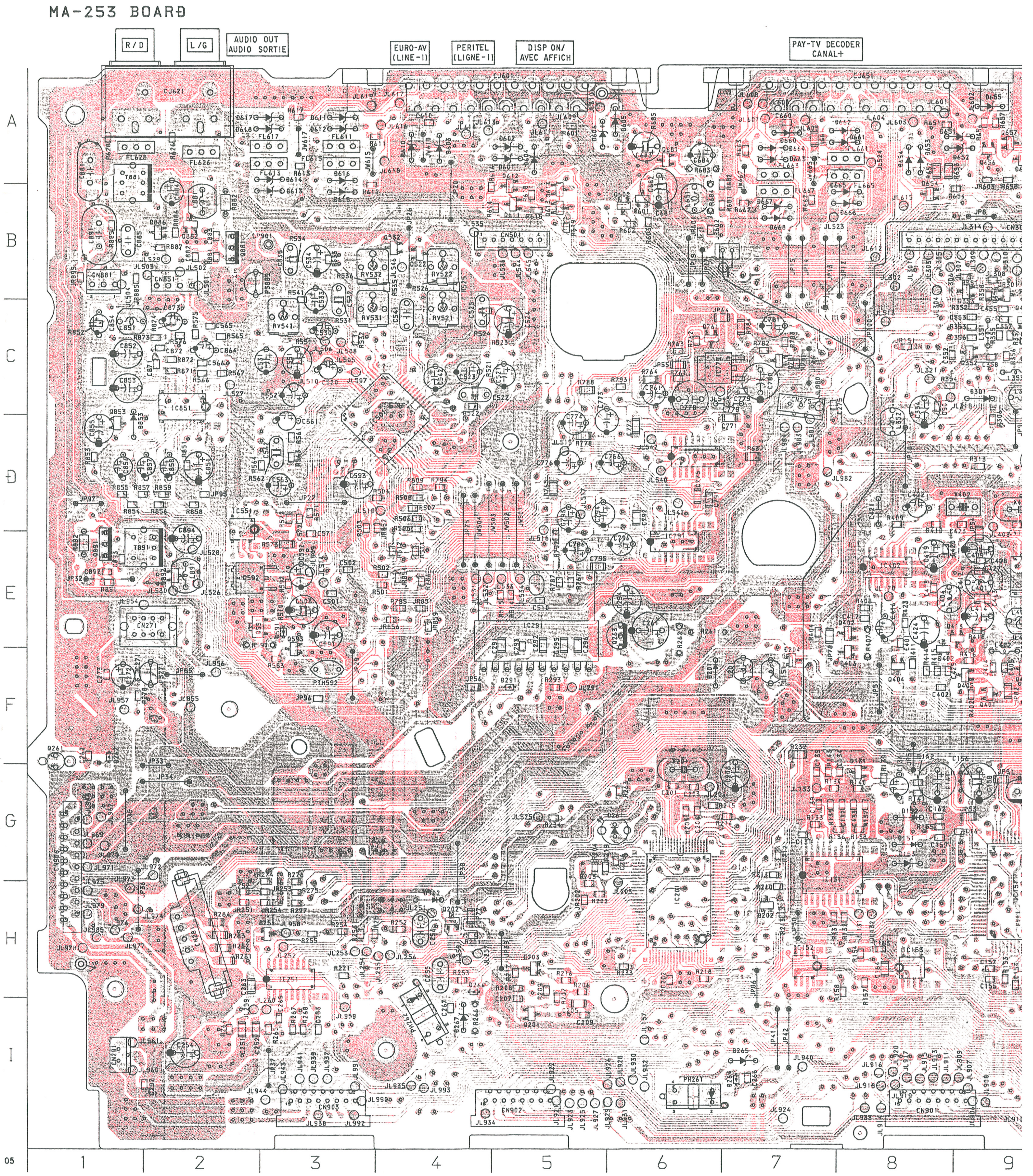
MA-253 BOARD (1/6)
CN301
(SEE PAGE 4-13)

no mark:REC/PB mode
R:REC mode
P:PB mode

There are cases that the part isn't mounted in this model is printed on this diagram.

MA-253 (SERVO/SYSTEM CONTROL, VIDEO, AUDIO, IO, TUNER), DC-70 (RELAY) PRINTED WIRING BOARDS

– Ref. No.: MA-253 Board; 2,000 series, DC-70 Board; 1,000 series –


MA-253 BOARD
R/D
L/G
AUDIO OUT
AUDIO SORTIE
EURO-AV
(LINE-1)
PERITEL
(LIGNE-1)
DISP ON/
AVEC AFFICH
PAY-TV DECODER
CANAL+
CJ621
CJ601
CJ651
CN881
CN851
CN501
CN271
CN903
CN902
CN901
IC851
IC551
IC291
IC201
IC251
IC131
IC152
IC153
IC791
T881
T891
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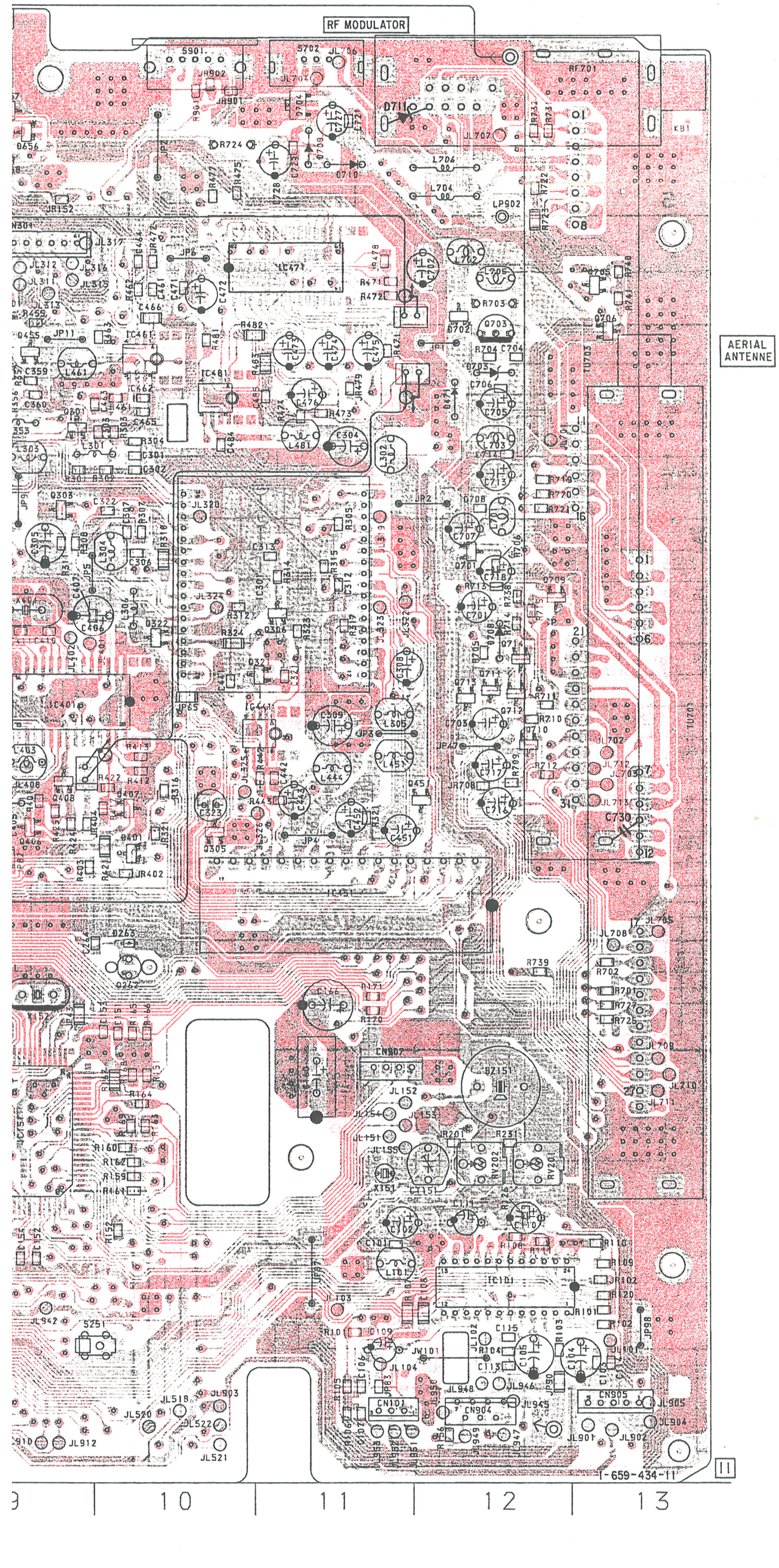
RF MODULATOR
AERIAL
ANTENNE
1-659-434-11
11
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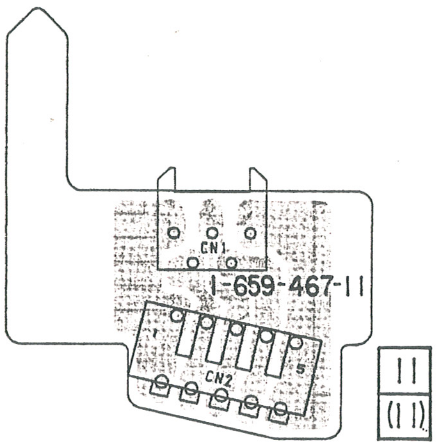
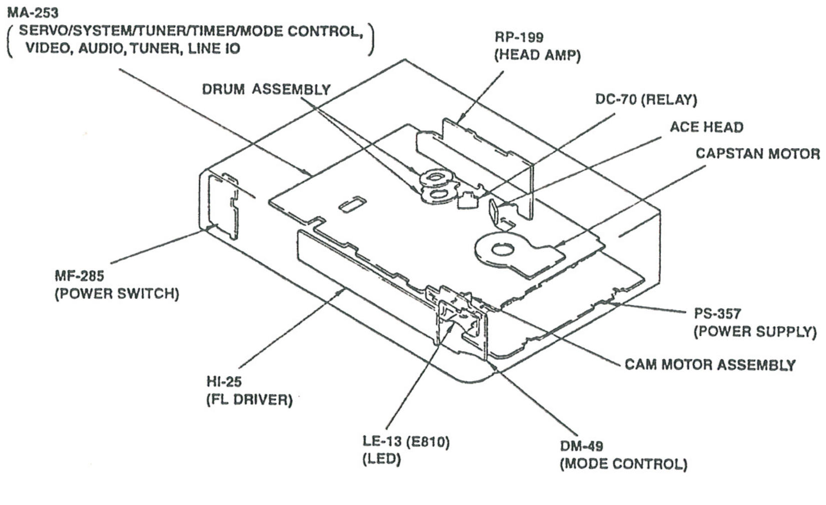
13

MA-253 BOARD

CN101	I-11	IC151	H-9
CN271	E-2	IC152	H-7
CN275	C-7	IC153	H-8
CN281	H-2	IC201	H-6
CN291	E-5	IC251	H-3
CN301	B-9	IC291	E-5
CN501	B-5	IC301	D-11
CN851	B-2	IC401	E-9
CN881	B-2	IC402	E-8
CN901	I-8	IC441	E-11
CN902	I-5	IC451	F-11
CN903	I-3	IC461	C-10
CN904	I-12	IC471	B-11
CN905	I-13	IC481	C-10
CN906	G-1	IC501	D-4
CN907	G-11	IC551	D-2
		IC771	D-7
D151	G-8	IC779	C-7
D152	G-8	IC791	E-6
D201	F-6	IC851	C-2
D202	H-7		
D203	H-5	Q131	G-8
D204	F-7	Q201	I-5
D251	H-3	Q202	H-4
D261	G-6	Q261	F-1
D265	I-7	Q262	G-10
D267	I-4	Q263	E-6
D291	F-5	Q303	D-9
D301	C-9	Q305	F-10
D401	F-10	Q306	D-11
D402	F-8	Q322	D-10
D403	F-8	Q352	C-9
D471	C-12	Q353	B-9
D591	E-3	Q401	F-9
D601	A-5	Q402	E-8
D602	A-5	Q404	F-8
D603	A-4	Q405	F-9
D604	A-5	Q406	F-9
D605	A-6	Q407	F-10
D606	A-5	Q408	E-9
D610	A-4	Q413	E-9
D611	A-3	Q451	F-12
D612	A-3	Q455	C-9
D613	B-3	Q456	B-9
D614	A-3	Q522	B-4
D615	B-3	Q532	B-4
D616	A-3	Q591	E-2
D617	A-3	Q592	E-2
D618	A-3	Q593	E-3
D651	A-9	Q601	B-6
D652	A-9	Q602	B-6
D653	A-8	Q654	B-8
D654	A-8	Q656	A-9
D655	A-9	Q657	A-9
D656	A-9	Q681	A-6
D660	A-7	Q701	D-12
D661	A-8	Q703	C-12
D662	A-8	Q704	A-11
D663	A-7	Q705	B-13
D664	A-7	Q706	C-13
D665	B-8	Q709	D-12
D666	B-8	Q710	E-12
D667	B-7	Q711	E-12
D668	B-7	Q712	E-12
D702	B-12	Q713	E-12
D703	C-12	Q714	E-12
D708	E-12	Q761	C-6
D709	A-11	Q781	C-7
D710	B-11	Q853	D-1
D853	D-1	Q881	B-2
D902	H-3	Q882	B-2
		Q886	B-2
IC101	I-12	Q891	E-1
IC131	G-7	Q892	E-2

DC-70 BOARD

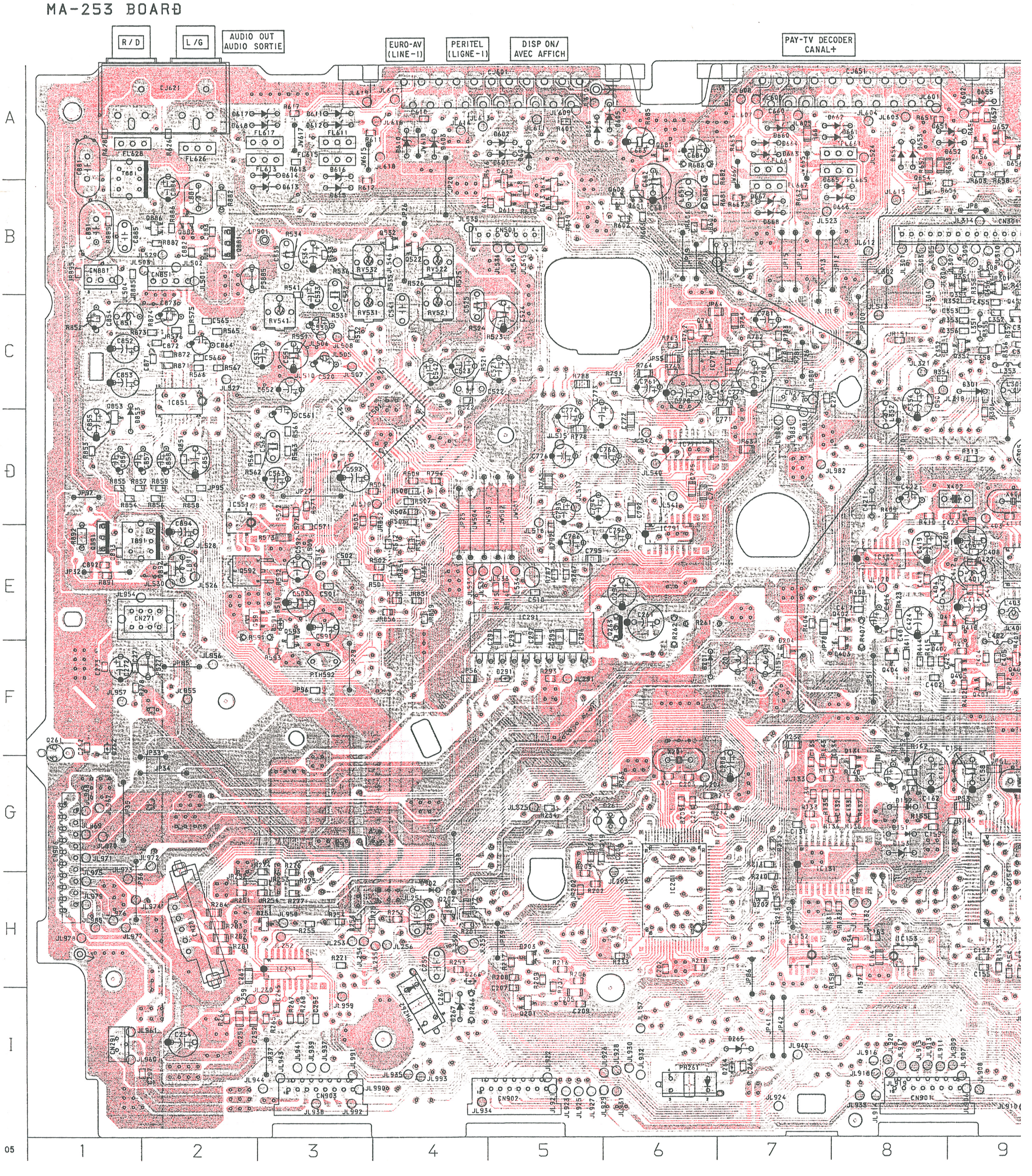

CN1
1-659-467-11
CN2
11
(11)


MA-253
(SERVO/SYSTEM/TUNER/TIMER/MODE CONTROL, VIDEO, AUDIO, TUNER, LINE IO)
RP-199
(HEAD AMP)
DRUM ASSEMBLY
DC-70 (RELAY)
ACE HEAD
CAPSTAN MOTOR
MF-285
(POWER SWITCH)
PS-357
(POWER SUPPLY)
CAM MOTOR ASSEMBLY
HI-25
(FL DRIVER)
LE-13 (E810)
(LED)
DM-49
(MODE CONTROL)

There are cases that the part isn't mounted in this model is printed on this diagram.

MA-253 (SERVO/SYSTEM CONTROL, VIDEO, AUDIO, IO, TUNER), DC-70 (RELAY) PRINTED WIRING BOARDS

– Ref. No.: MA-253 Board; 2,000 series, DC-70 Board; 1,000 series –


MA-253 BOARD
R/D
L/G
AUDIO OUT
AUDIO SORTIE
EURO-AV
(LINE-1)
PERITEL
(LIGNE-1)
DISP ON/
AVEC AFFICH
PAY-TV DECODER
CANAL+
A
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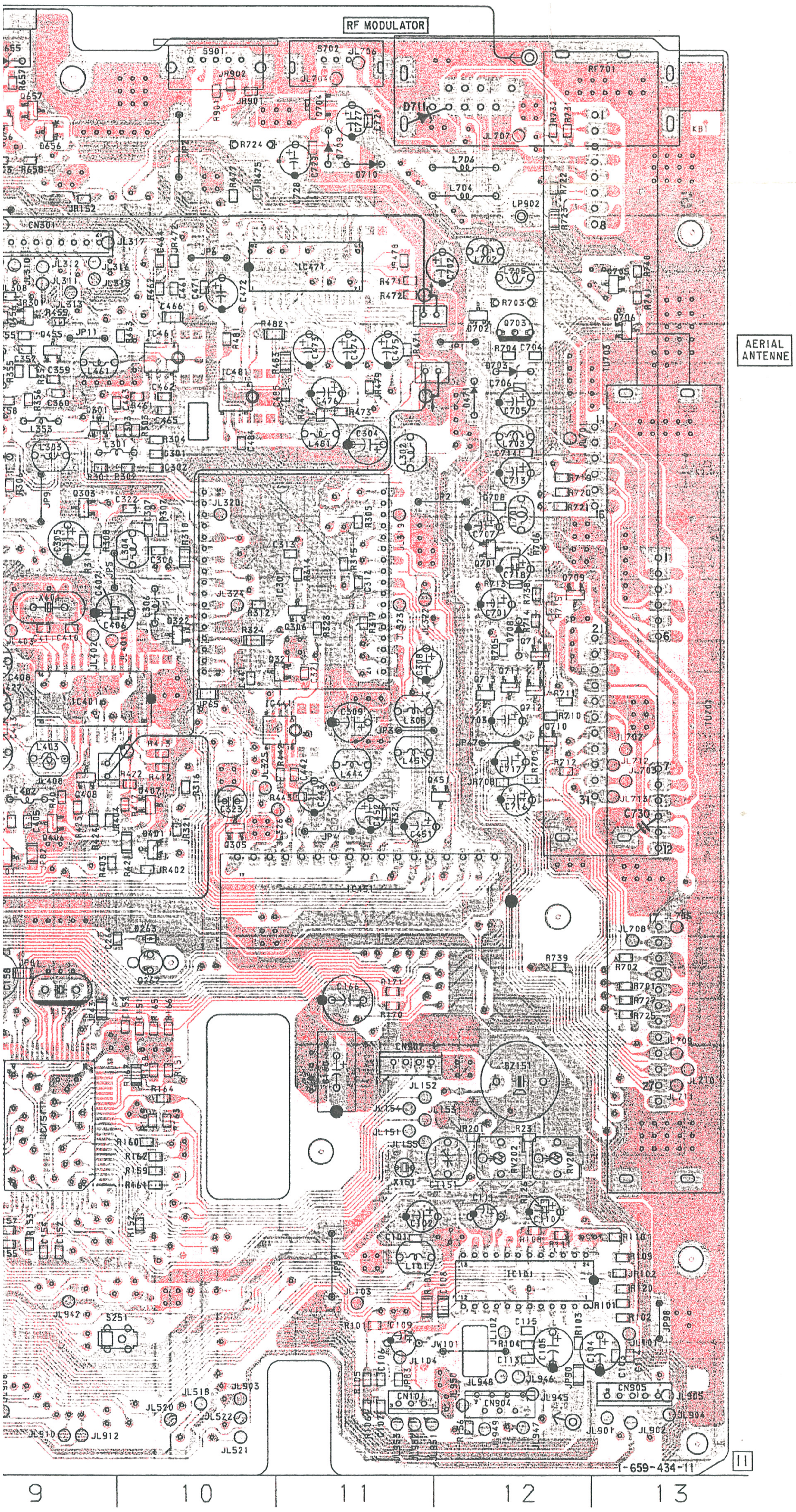
RF MODULATOR
AERIAL
ANTENNE
1-659-434-11
11
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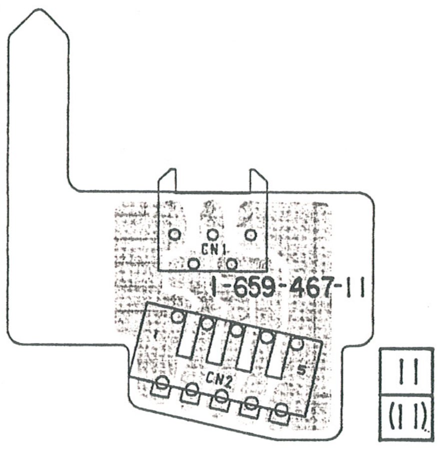
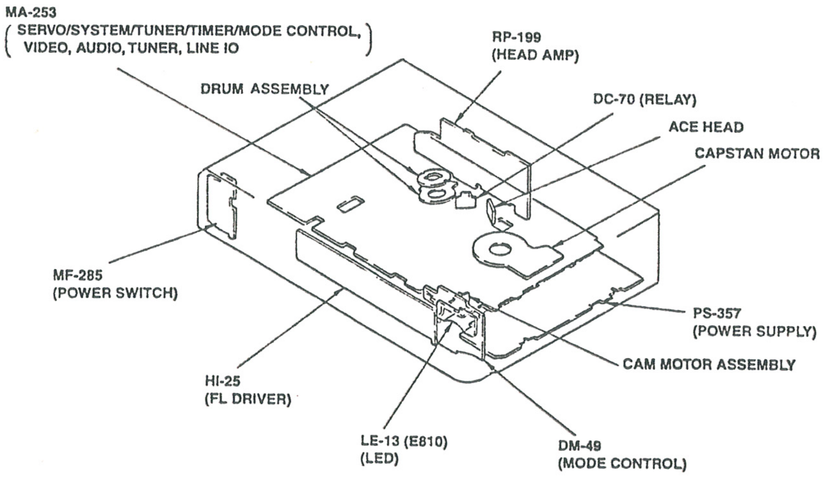
11
12
13

MA-253 BOARD

CN101	I-11	IC151	H-9
CN271	E-2	IC152	H-7
CN275	C-7	IC153	H-8
CN281	H-2	IC201	H-6
CN291	E-5	IC251	H-3
CN301	B-9	IC291	E-5
CN501	B-5	IC301	D-11
CN851	B-2	IC401	E-9
CN881	B-2	IC402	E-8
CN901	I-8	IC441	E-11
CN902	I-5	IC451	F-11
CN903	I-3	IC461	C-10
CN904	I-12	IC471	B-11
CN905	I-13	IC481	C-10
CN906	G-1	IC501	D-4
CN907	G-11	IC551	D-2
		IC771	D-7
D151	G-8	IC779	C-7
D152	G-8	IC791	E-6
D201	F-6	IC851	C-2
D202	H-7		
D203	H-5	Q131	G-8
D204	F-7	Q201	I-5
D251	H-3	Q202	H-4
D261	G-6	Q261	F-1
D265	I-7	Q262	G-10
D267	I-4	Q263	E-6
D291	F-5	Q303	D-9
D301	C-9	Q305	F-10
D401	F-10	Q306	D-11
D402	F-8	Q322	D-10
D403	F-8	Q352	C-9
D471	C-12	Q353	B-9
D591	E-3	Q401	F-9
D601	A-5	Q402	E-8
D602	A-5	Q404	F-8
D603	A-4	Q405	F-9
D604	A-5	Q406	F-9
D605	A-6	Q407	F-10
D606	A-5	Q408	E-9
D610	A-4	Q413	E-9
D611	A-3	Q451	F-12
D612	A-3	Q455	C-9
D613	B-3	Q456	B-9
D614	A-3	Q522	B-4
D615	B-3	Q532	B-4
D616	A-3	Q591	E-2
D617	A-3	Q592	E-2
D618	A-3	Q593	E-3
D651	A-9	Q601	B-6
D652	A-9	Q602	B-6
D653	A-8	Q654	B-8
D654	A-8	Q656	A-9
D655	A-9	Q657	A-9
D656	A-9	Q681	A-6
D660	A-7	Q701	D-12
D661	A-8	Q703	C-12
D662	A-8	Q704	A-11
D663	A-7	Q705	B-13
D664	A-7	Q706	C-13
D665	B-8	Q709	D-12
D666	B-8	Q710	E-12
D667	B-7	Q711	E-12
D668	B-7	Q712	E-12
D702	B-12	Q713	E-12
D703	C-12	Q714	E-12
D708	E-12	Q761	C-6
D709	A-11	Q781	C-7
D710	B-11	Q853	D-1
D853	D-1	Q881	B-2
D902	H-3	Q882	B-2
		Q886	B-2
IC101	I-12	Q891	E-1
IC131	G-7	Q892	E-2

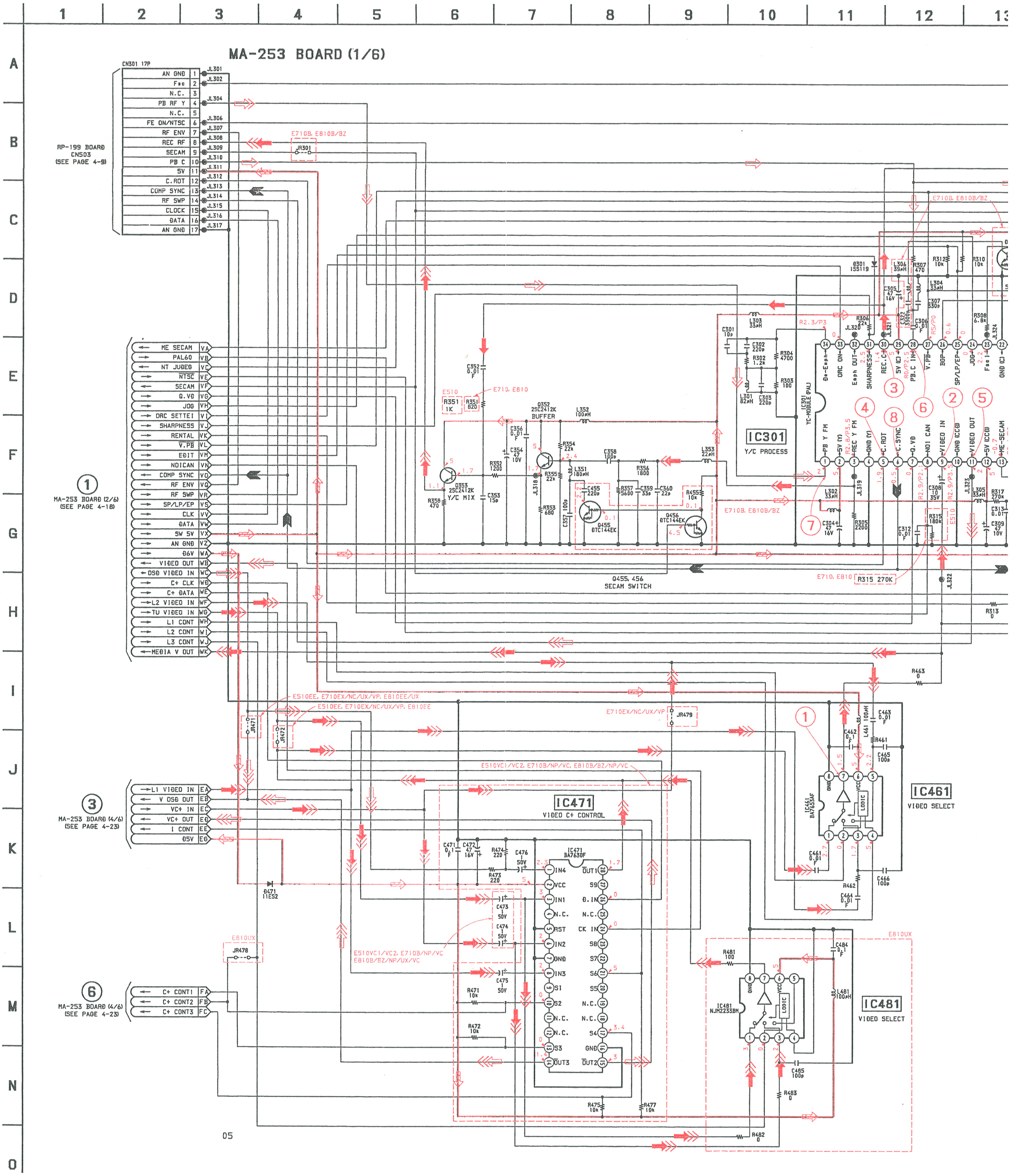
DC-70 BOARD


CN1
1-659-467-11
CN2
5
11
(11)

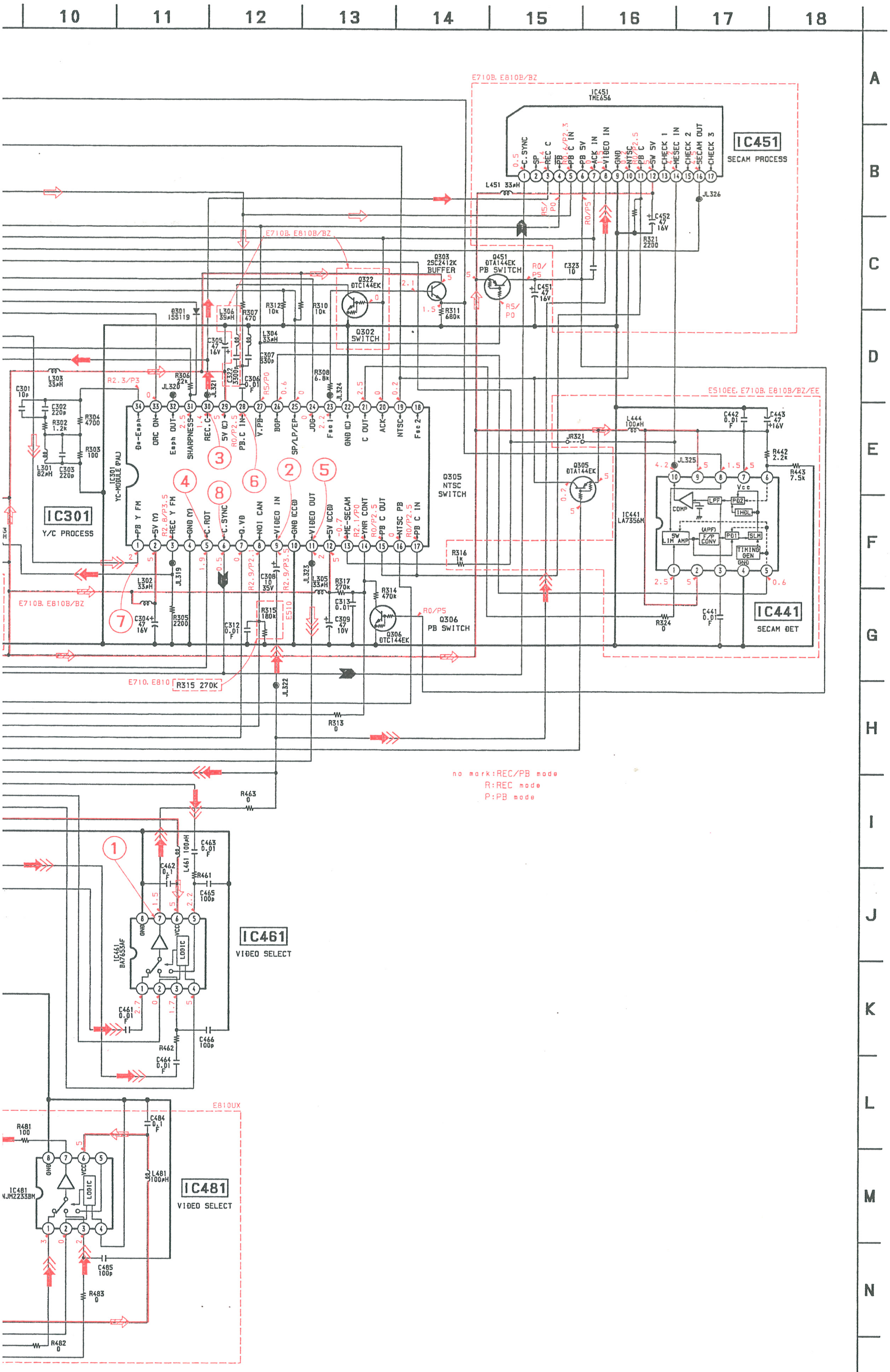

MA-253
SERVO/SYSTEM/TUNER/TIMER/MODE CONTROL,
VIDEO, AUDIO, TUNER, LINE IO
DRUM ASSEMBLY
RP-199
(HEAD AMP)
DC-70 (RELAY)
ACE HEAD
CAPSTAN MOTOR
MF-285
(POWER SWITCH)
PS-357
(POWER SUPPLY)
CAM MOTOR ASSEMBLY
HI-25
(FL DRIVER)
LE-13 (E810)
(LED)
DM-49
(MODE CONTROL)

MA-253 (VIDEO) SCHEMATIC DIAGRAM • See page 4-10 to 4-12 for printed wiring board.

– Ref. No.: MA-253 Board; 2,000 series –



MA-253 BOARD (1/6)
CN301 17P
AN GND
Fsc
N.C.
PB RF Y
FE ON/NTSC
RF ENV
REC RF
SECAM
PB C
5V
C.ROT
COMP SYNC
RF SWP
CLOCK
DATA
RP-199 BOARD CN503 (SEE PAGE 4-9)
E710B, E810B/BZ
JR301
① MA-253 BOARD (2/6) (SEE PAGE 4-18)
ME SECAM
PAL60
NT JUDEG
NTSC
Q.VD
JOG
ORC SETTEI
SHARPNESS
RENTAL
V.PB
EDIT
NOICAN
CLK
SW 5V
D6V
VIDEO OUT
OSD VIDEO IN
C+ CLK
C+ DATA
L2 VIDEO IN
TU VIDEO IN
L1 CONT
L2 CONT
L3 CONT
MEDIA V OUT
③ MA-253 BOARD (4/6) (SEE PAGE 4-23)
L1 VIDEO IN
V OSD OUT
VC+ IN
VC+ OUT
I CONT
D5V
⑥ MA-253 BOARD (4/6) (SEE PAGE 4-23)
C+ CONT1
C+ CONT2
C+ CONT3
Q352 2SC2412K BUFFER
Q353 2SC2412K Y/C MIX
Q455, 456 SECAM SWITCH
Q455 DTC144EK
Q456 DTC144EK
IC301 Y/C PROCESS
IC301 YC-MODULE (PAL)
D301 1SS119
IC461 VIDEO SELECT
IC461 BA7655AF
IC471 VIDEO C+ CONTROL
IC471 BA7630F
IC481 VIDEO SELECT
IC481 NJM2233BM
D471 11ES2
E510EE, E710EX/NC/UX/VP, E810EE/UX
E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC
E710EX/NC/UX/VP
E810UX
JR471
JR472
JR478
JR479
R315 270K
E710, E810
E510
05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16
17
18
A
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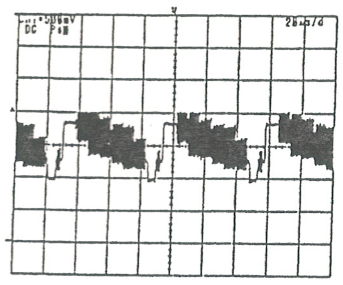
C
D
E
F
G
H
I
J
K
L
M
N
O
E710B, E810B/BZ
IC451
TMF656
IC451
SECAM PROCESS
C.SYNC
SP
REC C
PB
PB C IN
PB 5V
ACK IN
VIDEO IN
GND
NTSC
PB C
SW 5V
CHECK 1
MESEC IN
CHECK 2
SECAM OUT
CHECK 3
L451 33μH
JL326
C452 47 16V
R321 2200
Q303 2SC2412K BUFFER
Q451 DTA144EK PB SWITCH
C323 10
C451 47 16V
R311 680k
Q322 DTC144EK
Q302 SWITCH
D301 1SS119
L306 39μH
R307 470
R312 10k
R310 10k
L304 33μH
C305 47 16V
C322 3300p
C306 0.01 F
C307 330p
R308 6.8k
JL324
R306 22k
JL320
JL321
L303 33μH
C301 10p
C302 220p
R302 1.2k
R304 4700
R303 100
L301 82μH
C303 220p
IC301
Y/C PROCESS
IC301 YC-MODULE (PAL)
De-Emph
ORC ON
Emph OUT
SHARPNESS
REC.C
5V (C)
PB.C IN
V.PB
BGP
SP/LP/EP
JOG
Fsc 1
GND (C)
C OUT
ACK
NTSC
Fsc 2
PB Y FM
5V (Y)
REC Y FM
GND (Y)
C.ROT
C.SYNC
Q.VD
NOI CAN
VIDEO IN
GND (CCD)
VIDEO OUT
5V (CCD)
ME-SECAM
YNR CONT
PB C OUT
NTSC PB
PB C IN
Q305 NTSC SWITCH
R316 1k
L302 33μH
JL319
C304 47 16V
R305 2200
C312 0.01 F
R315 180k
E510
C308 10 35V
JL323
L305 33μH
R317 270k
C313 0.01
C309 47 10V
R314 470k
Q306 DTC144EK
Q306 PB SWITCH
E710B, E810B/BZ
E710, E810
R315 270K
JL322
R313 0
E510EE, E710B, E810B/BZ/EE
L444 100μH
C442 0.01 F
C443 47 16V
R442 2.2k
R443 7.5k
JR321
JL325
Q305 DTA144EK
IC441 LA7356M
Vcc
COMP
LPF
PD2
THOL
(APF)
SW LIM AMP
F/P CONV
PD1
SLH
TIMING GEN
GND
C441 0.01 F
R324 0
IC441
SECAM DET
R463 0
C463 0.01 F
L461 100μH
C462 0.1 F
R461
C465 100p
IC461 BA7655AF
GND
VCC
LOGIC
IC461
VIDEO SELECT
C461 0.01 F
R462
C466 100p
C464 0.01 F
E810UX
R481 100
C484 0.1 F
L481 100μH
IC481 NJM2233BM
IC481
VIDEO SELECT
C485 100p
R483 0
R482 0
①
②
③
④
⑤
⑥
⑦
⑧
R0/P5
R5/P0
R0/P2.5
R2.3/P3
R2.8/P3.5
R2.9/P2.1
R2.9/P3.5
R2.1/P0
R0.6/P2.3

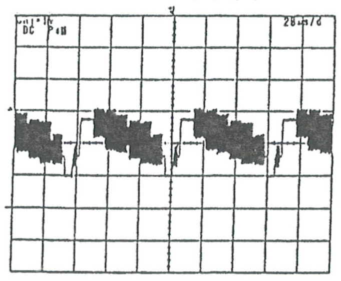
no mark:REC/PB mode
R:REC mode
P:PB mode

- **Waveforms**

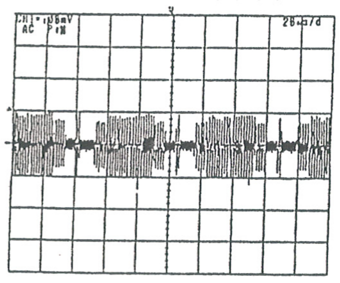
❶ IC461 ⑦ REC
1.1Vp-p (H)



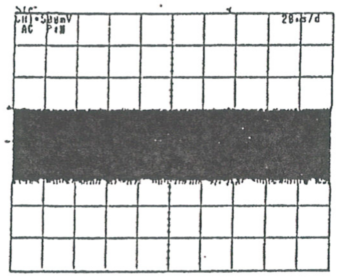
❷ IC301 ⑨ REC
1.1Vp-p (H)



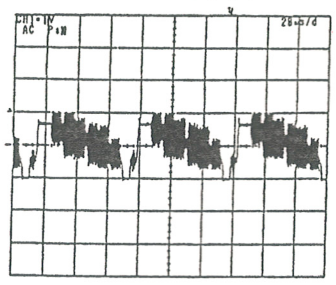
❸ IC301 ㉚ REC
188mVp-p (H)



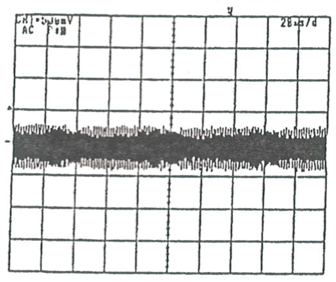
❹ IC301 ③ REC
500mV/DIV, 20μs/DIV



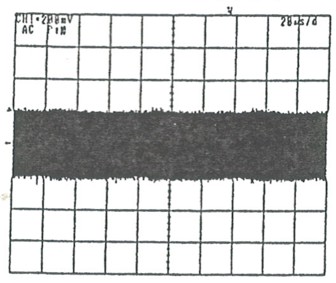
❺ IC301 ⑪ PB
2.3Vp-p (H)



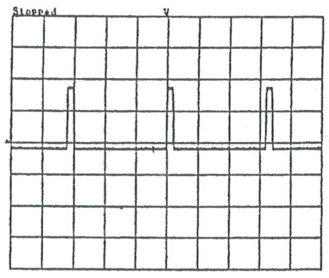
❻ IC301 ㉘ PB
560mVp-p (H)



❼ IC301 ① PB
680mVp-p (H)



❽ IC301 ⑥ E-E
4Vp-p (H)



- Signal path

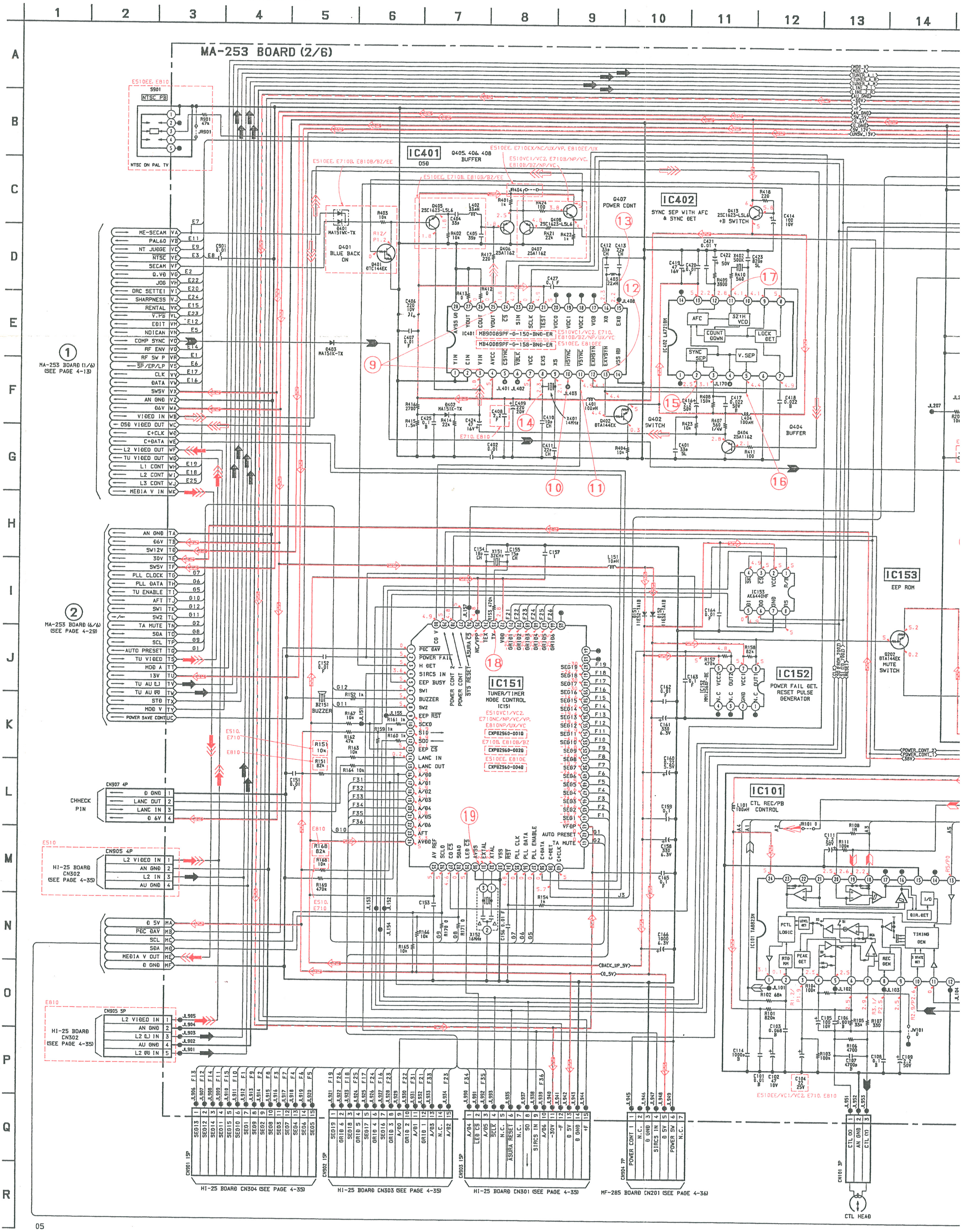
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡≫	➡⋙
PB	⇨	⇨≫	⇨⋙

- Signal path

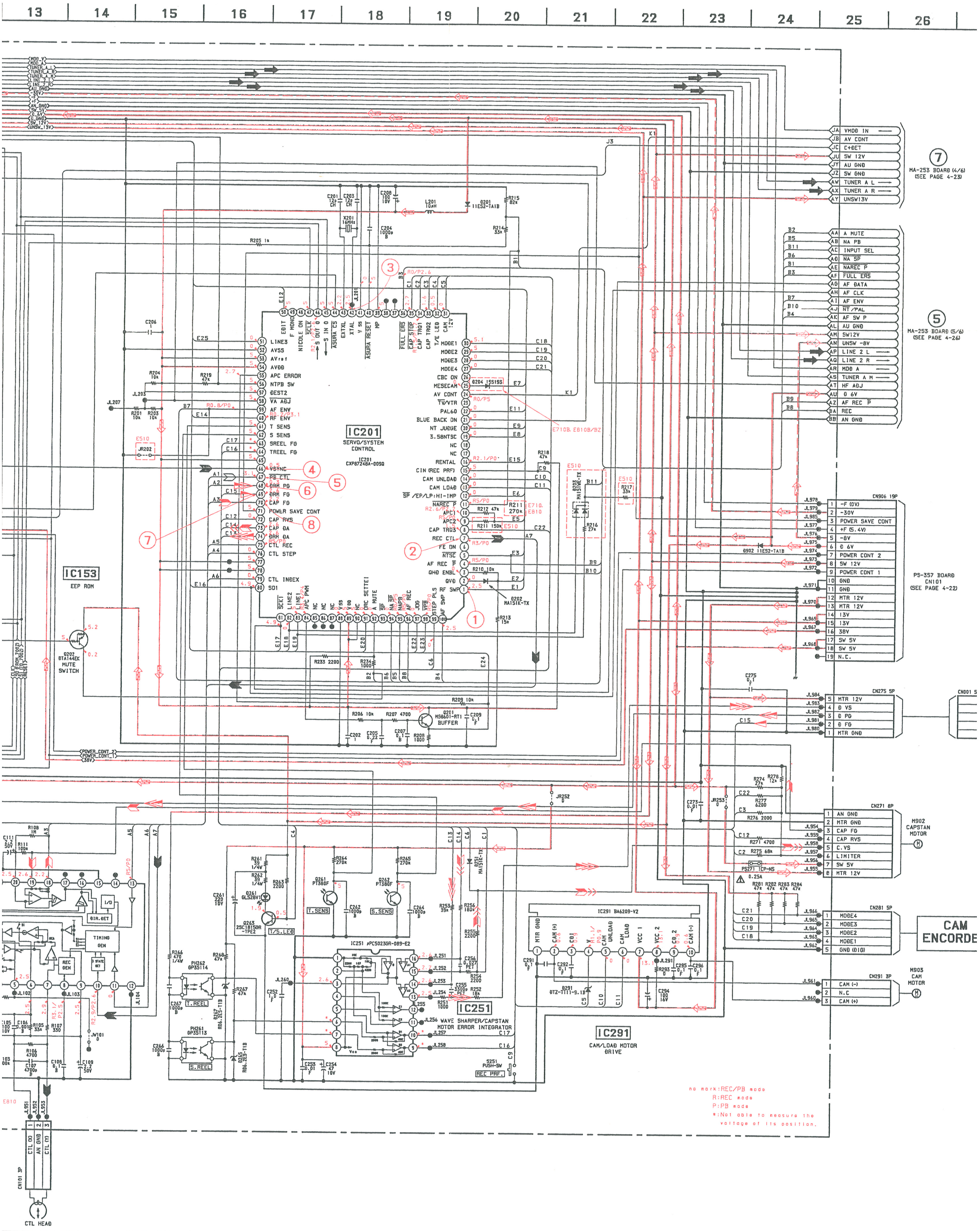
	REC	REC/PB	PB
Ref. signal	➤		

MA-253 (SERVO/SYSTEM/TUNER/TIMER/MODE CONTROL), DC-70 (RELAY) SCHEMATIC DIAGRAM • See page 4-10 to 4-12 for printed wiring board.

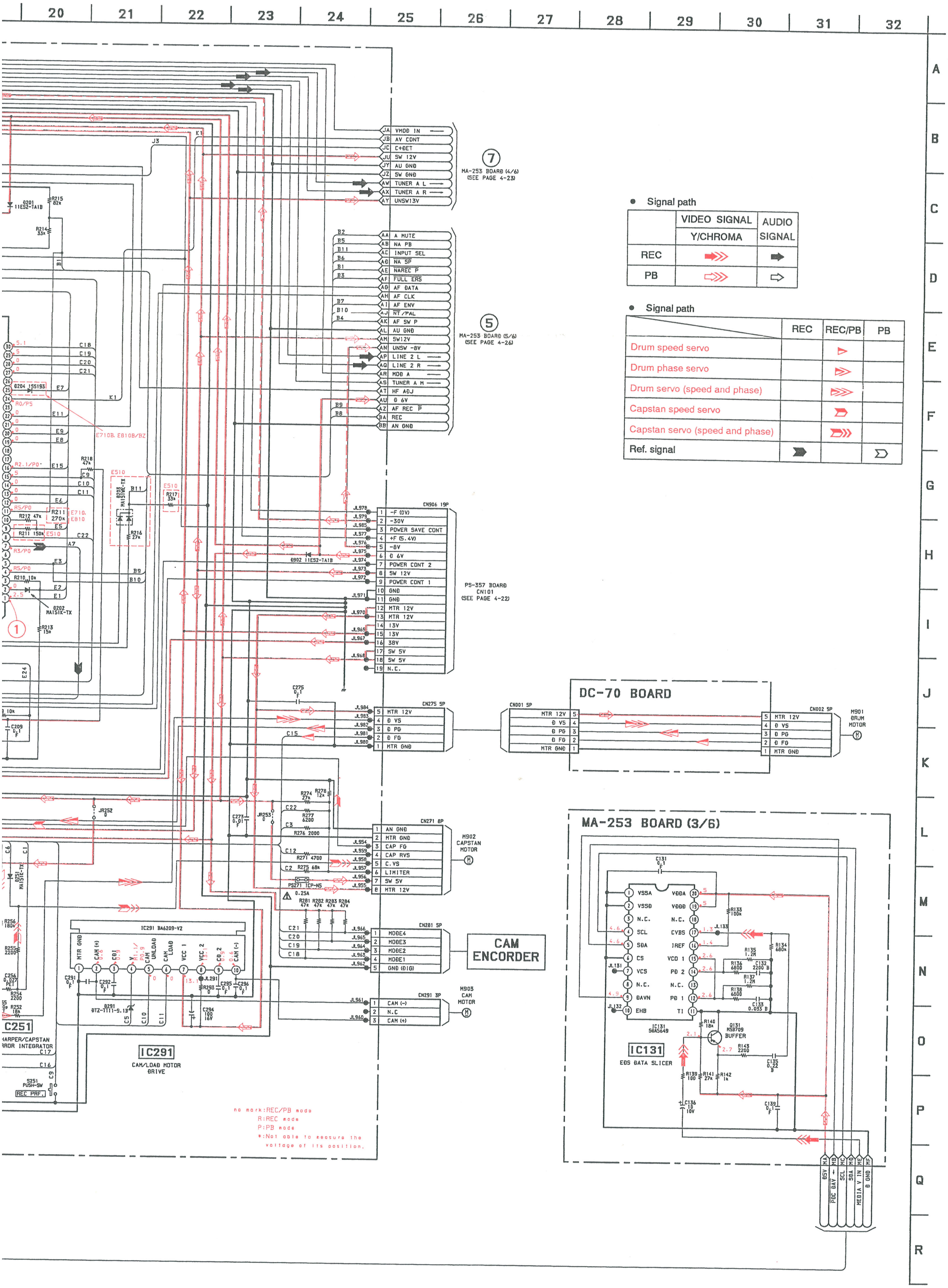
– Ref. No.: MA-253 Board; 2,000 series, DC-70 Board; 1,000 series –


MA-253 BOARD (2/6)
IC401 OSD
Q405, 406, 408 BUFFER
Q401 BLUE BACK ON
Q407 POWER CONT
IC402 SYNC SEP WITH AFC & SYNC DET
Q413 +B SWITCH
IC401 MB90089PF-G-150-BND-ER
MB40089PF-G-158-BND-ER
IC402 LA7218M
AFC
321H VCO
COUNT DOWN
LOCK DET
SYNC SEP
V. SEP
Q402 SWITCH
Q404 BUFFER
S901 NTSC PB
NTSC ON PAL TV
① MA-253 BOARD (1/6) (SEE PAGE 4-13)
② MA-253 BOARD (6/6) (SEE PAGE 4-29)
IC151 TUNER/TIMER MODE CONTROL
CXP82960-001Q
CXP82960-002Q
CXP82960-004Q
IC153 EEP ROM
IC152 POWER FAIL DET, RESET PULSE GENERATOR
Q203 MUTE SWITCH
IC101 CTL REC/PB CONTROL
BZ151 BUZZER
X151 32KHz
X152 16MHz
X401 14MHz
CHHECK PIN
CN907 4P
CN905 4P
HI-25 BOARD CN302 (SEE PAGE 4-35)
CN905 5P
HI-25 BOARD CN302 (SEE PAGE 4-35)
CN901 15P
HI-25 BOARD CN304 (SEE PAGE 4-35)
CN902 15P
HI-25 BOARD CN303 (SEE PAGE 4-35)
CN903 15P
HI-25 BOARD CN301 (SEE PAGE 4-35)
CN904 7P
MF-285 BOARD CN201 (SEE PAGE 4-36)
CN101 3P
CTL HEAD
(9) (10) (11) (12) (13) (14) (15) (16) (17) (18) (19)
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I J K L M N O P Q R

SERVO/SYSTEM/TUNER/TIMER/MODE CONTROL
MA-253, DC-70


13
14
15
16
17
18
19
20
21
22
23
24
25
26
IC201
SERVO/SYSTEM CONTROL
IC201 CXP87248A-009Q
IC153
EEP ROM
Q202 DTA144EK MUTE SWITCH
Q201 MSB601-RT1 BUFFER
X201 16MHz
IC251
IC251 μPC5023GR-089-E2
WAVE SHARPER/CAPSTAN MOTOR ERROR INTEGRATOR
IC291
IC291 BA6209-V2
CAM/LOAD MOTOR DRIVE
T.SENS
S.SENS
T/S.LED
T.REEL
S.REEL
REC PRF.
S251 PUSH-SW
TIMING GEN
REC GEN
DIR.DET
CTL HEAD
CN101 3P
CTL (X)
AN GND
CTL (Y)
MA-253 BOARD (4/6) (SEE PAGE 4-23)
MA-253 BOARD (5/6) (SEE PAGE 4-26)
PS-357 BOARD CN101 (SEE PAGE 4-22)
CN906 19P
CN275 5P
CN271 8P
CN281 5P
CN291 3P
M902 CAPSTAN MOTOR
M903 CAM MOTOR
CAM ENCORDE
VMOD IN
AV CONT
C+DET
SW 12V
AU GND
SW GND
TUNER A L
TUNER A R
UNSW13V
A MUTE
NA PB
INPUT SEL
NA SP
NAREC P
FULL ERS
AF DATA
AF CLK
AF ENV
NT/PAL
AF SW P
AU GND
SW12V
UNSW -8V
LINE 2 L
LINE 2 R
MOD A
TUNER A M
HF ADJ
D 6V
AF REC P
REC
AN GND
-F (DV)
-30V
POWER SAVE CONT
+F (5.4V)
-8V
D 6V
POWER CONT 2
SW 12V
POWER CONT 1
GND
GND
MTR 12V
MTR 12V
13V
13V
38V
SW 5V
SW 5V
N.C.
MTR 12V
D VS
D PG
D FG
MTR GND
AN GND
MTR GND
CAP FG
CAP RVS
C.VS
LIMITER
SW 5V
MTR 12V
MODE4
MODE3
MODE2
MODE1
GND (DIG)
CAM (-)
N.C
CAM (+)
LINE3
AVSS
AVref
AVDD
APC ERROR
NTPB SW
DEST2
VA ADJ
AF ENV
RF ENV
T SENS
S SENS
SREEL FG
TREEL FG
VSYNC
PB CTL
DRM PG
DRM FG
CAP FG
POWER SAVE CONT
CAP RVS
CAP DA
DRM DA
CTL REC
CTL STEP
CTL INDEX
SDI
MODE1
MODE2
MODE3
MODE4
CBC ON
MESECAM
AV CONT
TV/VTR
PAL60
BLUE BACK ON
NT JUDGE
3.58NTSC
NC
NC
RENTAL
CIN (REC PRF)
CAM UNLOAD
CAM LOAD
SP /EP/LP:HI-IMP
NAREC P
APC1
APC2
CAP TRQ3
REC CTL
FE ON
NTSC
AF REC P
OHD ENBL
QVD
RF SWP
EDIT
F MONO
NICOLE ON
SCLK
S OUT
S IN
ASURA CS
EXTXL
XTAL
Vss
ASURA RESET
NP
FULL ERS
CAP STOP
CAP TRQ1
CAP TRQ2
T/E LED
CAM 12V
SCKT
LINE2
LINE1
APC PWM
DRC SETTEI
A MUTE
SP
NA SP
NAPB
AF REC
JOG
STEP PLS
AF SWP
MTR GND
CAM (+)
CAM (-)
M.1/P0.9
CAM UNLOAD
CAM LOAD
VCC 1
VCC 2
POWER CONT 2
POWER CONT 1
38V
MOD V
MOD A
TUNER A L
TUNER A R
TUNER A M
LINE 2 L
LINE 2 R
AU GND
-30V
AN GND
SW 5V
D 6V
D GND
SW 12V
UNSW 13V
D902 11ES2-TA1B
D201 11ES2-TA1B
D204 1SS193
D202 MA151K-TX
D203 MA151K-TX
D251 MA151K-TX
D261 GL528V1
Q261 PT380F
Q262 PT380F
Q263 2SC1815OR-TPE2
PH262 GP3S114
PH261 GP3S113
D291 DTZ-TT11-5.1B
PS271 ICP-N5
0.25A
E710, E810/BZ
E510
E810
R205 1k
R204 10k
R219 47k
R201 10k
R203 10k
R202
R218 47k
R212 47k
R211 270k
R211 150k
R216 27k
R217 33k
R213 15k
R210 10k
R209 10k
R206 10k
R207 4700
R233 2200
R234 1000
R208 100k
R215 82k
R214 33k
L201 10μH
C201 12p CH
C203 12p CH
C208 100 10V
C204 1000p B
C206
C202
C205 0.22 F
C207 0.1 B
C209 0.1 F
C275 0.1
R274 27k
R278 12k
R277 6200
R276 2000
R271 4700
R275 68k
R281 R282 R283 R284 47k 47k 47k 47k
C273 0.01
JR252 0
JR253 0
R261 39 1/4W
R262 39 1/4W
R263 2200
R264 270k
R265 270k
C261 220 10V
C262 1000p B
C264 1000p B
R253 39k
R256 180k
R255 2200
C256 0.027 PET
R254 2200
C255 3300p PET
R252 18k
R251 1000
R266 470 1/4W
R268 47k
R267 47k
C267 1000p B
C266 1000p B
C252 1 F
C253 0.01 F
C254 47 10V
C291 0.1 F
C292 0.1 F
C295 0.1 F
C296 0.1 F
C294 100 16V
R293 0
C111 2.2 50V
R111 100k
R108 1M
C105 C106 0.001 B
R105 33k
R107 330
R106 4700
C107 4700p B
C108 0.1 B
C109 2.2 50V
JW101 0
D265 RD6.2ES-T1B
D267 RD6.2ES-T1B

no mark: REC/PB mode
R: REC mode
P: PB mode
*: Not able to measure the voltage of its position.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H
I
J
K
L
M
N
O
P
Q
R
JA VMOD IN
JB AV CONT
JC C+DET
JU SW 12V
JY AU GND
JZ SW GND
AW TUNER A L
AX TUNER A R
AY UNSW13V
⑦
MA-253 BOARD (4/6)
(SEE PAGE 4-23)
AA A MUTE
AB NA PB
AC INPUT SEL
AD NA SP
AE NAREC P
AF FULL ERS
AG AF DATA
AH AF CLK
AI AF ENV
AJ NT/PAL
AK AF SW P
AL AU GND
AM SW12V
AN UNSW -8V
AP LINE 2 L
AQ LINE 2 R
AR MOD A
AS TUNER A M
AT HF ADJ
AU D 6V
AZ AF REC P
BA REC
BB AN GND
⑤
MA-253 BOARD (5/6)
(SEE PAGE 4-26)
CN906 19P
1 -F (0V)
2 -30V
3 POWER SAVE CONT
4 +F (5.4V)
5 -8V
6 D 6V
7 POWER CONT 2
8 SW 12V
9 POWER CONT 1
10 GND
11 GND
12 MTR 12V
13 MTR 12V
14 13V
15 13V
16 38V
17 SW 5V
18 SW 5V
19 N.C.
PS-357 BOARD
CN101
(SEE PAGE 4-22)
D902 11ES2-TA1B
DC-70 BOARD
CN275 5P
5 MTR 12V
4 D VS
3 D PG
2 D FG
1 MTR GND
CN001 5P
CN002 5P
M901
DRUM
MOTOR
CN271 8P
1 AN GND
2 MTR GND
3 CAP FG
4 CAP RVS
5 C.VS
6 LIMITER
7 SW 5V
8 MTR 12V
M902
CAPSTAN
MOTOR
PS271 ICP-N5
0.25A
CN281 5P
1 MODE4
2 MODE3
3 MODE2
4 MODE1
5 GND (DIG)
CAM
ENCORDER
CN291 3P
1 CAM (-)
2 N.C
3 CAM (+)
M903
CAM
MOTOR
IC291 BA6209-V2
MTR GND
CAM (+)
CB1
CAM UNLOAD
CAM LOAD
VCC 1
VCC 2
CB 2
CAM (-)
B291
BTZ-T111-9.1B
IC291
CAM/LOAD MOTOR
DRIVE
C251
HARPER/CAPSTAN
RROR INTEGRATOR
S251
PUSH-SW
REC PRF.
MA-253 BOARD (3/6)
C131
0.1
IC131
SDA5649
VSSA
VSSD
N.C.
SCL
SDA
CS
VCS
N.C.
DAVN
EHB
VDDA
VDDD
N.C.
CVBS
IREF
VCO 1
PD 2
N.C.
PD 1
TI
IC131
EDS DATA SLICER
Q131
MSD709
BUFFER
R133 100k
R134 680k
R135 1.2M
R136 6800
R137 1.2M
R138 6800
R139 100
R140 18k
R141 27k
R142 1k
R143 2200
C132 2200 B
C133 0.033 B
C135 0.22 B
C136 10 10V
C139
D5V
PDC DAV
SCL
SDA
MEDIA V IN
D GND
MA
MB
MC
MD
ME
MF
①
D201 11ES2-TA1B
D202 MA151K-TX
D203 MA151K-TX
D204 1SS193
D251 MA151K-TX
E710B, E810B/BZ
E510
R215 82k
R214 33k
R212 47k
R211 270k
R211 150k
R213 15k
R216 27k
R217 33k
R218 47k
R210 10k
R274 27k
R278 12k
R277 6200
R276 2000
R271 4700
R275 68k
R281 R282 R283 R284 47k 47k 47k 47k
JR252 0
JR253 0
C273 0.01 F
C275 0.1 F
C209 0.1 F
C291 0.1 F
C292 0.1 F
C294 100 16V
C295 0.1 F
C296 0.1 F
C256 0.027 PET
R254 2200
R255 2200
R256 180k
R252 18k

no mark:REC/PB mode
R:REC mode
P:PB mode
*:Not able to measure the voltage of its position.

● Signal path

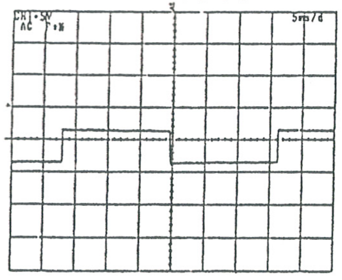
	VIDEO SIGNAL Y/CHROMA	AUDIO SIGNAL
REC	➡	➡
PB	⇨	⇨

● Signal path

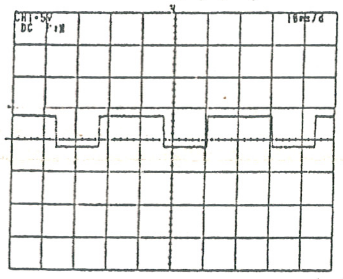
	REC	REC/PB	PB
Drum speed servo		▷	
Drum phase servo		⇛	
Drum servo (speed and phase)		⋙	
Capstan speed servo		⊳	
Capstan servo (speed and phase)		⫸	
Ref. signal	➡		⇨

- **Waveforms**

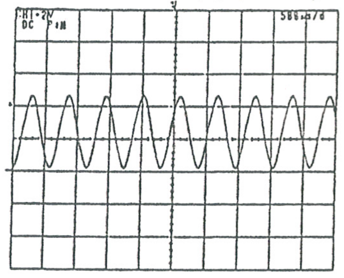
❶ IC201 ① REC/PB
5Vp-p (V)



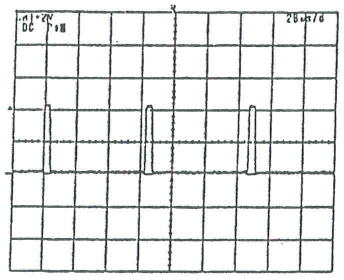
❷ IC201 ⑦ REC
5Vp-p (2V)



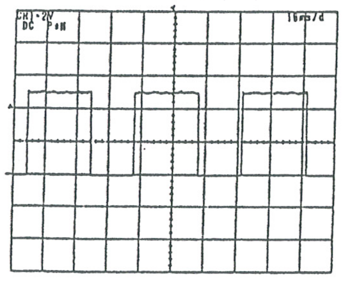
❸ IC201 ㊷ REC/PB
4.4Vp-p (16MHz)



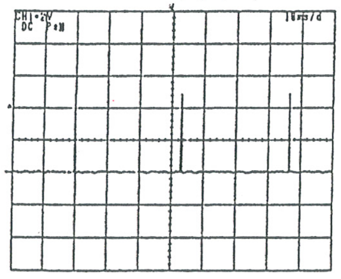
❹ IC201 (66) REC/PB
4Vp-p (H)



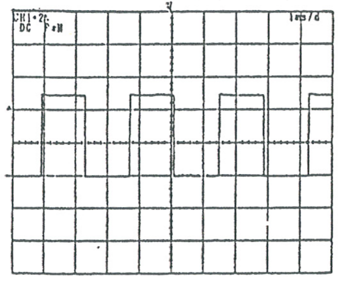
❺ IC201 (67) PB
5Vp-p (2V)



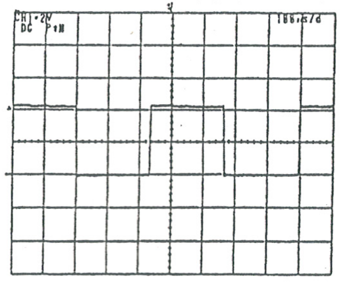
❻ IC201 (68) REC/PB
5Vp-p (2V)



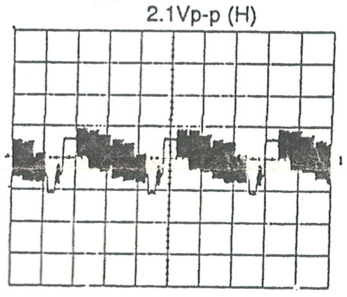
❼ IC201 (69) REC/PB
5Vp-p (360Hz)



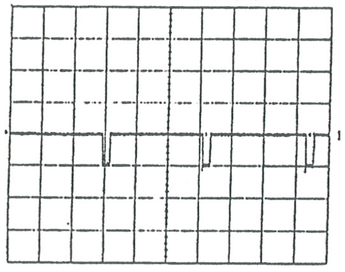
❽ IC201 (70) REC/PB
4.2Vp-p (2.16kHz)



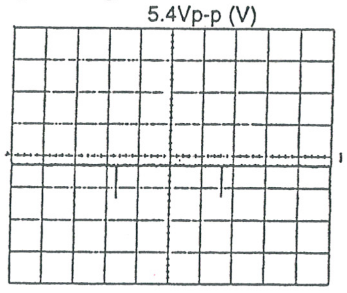
❾ IC401 ③ REC/PB
2.1Vp-p (H)



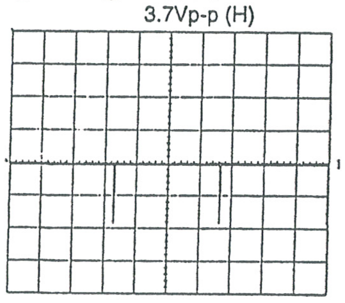
❿ IC401 ⑩ REC/PB
6.8Vp-p (H)



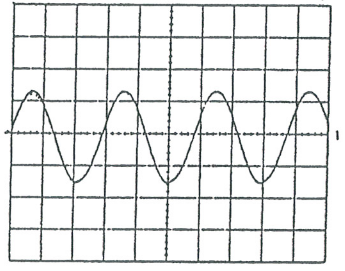
⓫IC401 ⑪ REC/PB
5.4Vp-p (V)



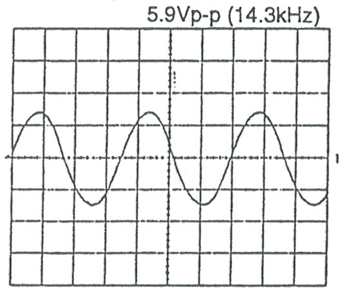
⓬ IC401 ⑬ REC/PB
3.7Vp-p (H)



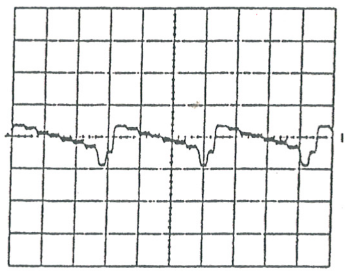
⓭ IC401 ⑮ REC/PB
5.8Vp-p (6.85MHz)



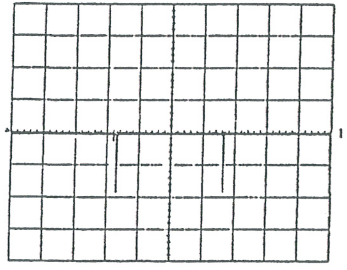
⓮ IC401 ⑧ REC/PB
5.9Vp-p (14.3kHz)



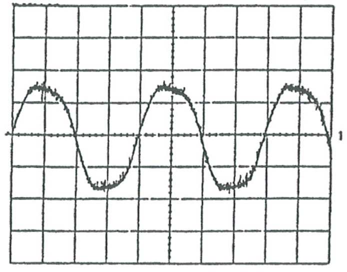
⓯ IC402 ② REC/PB
1.3Vp-p (H)



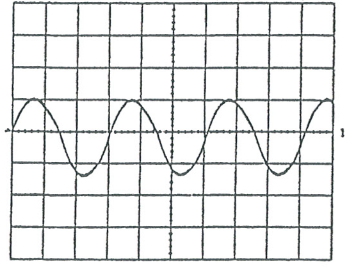
⓰ IC402 ⑤ REC/PB
3.7Vp-p (V)



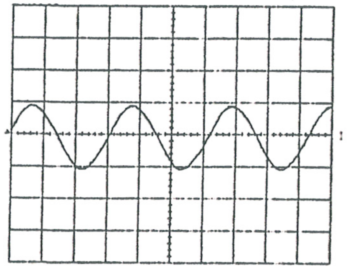
⓱ IC402 ⑩ REC/PB
700mV (500kHz)



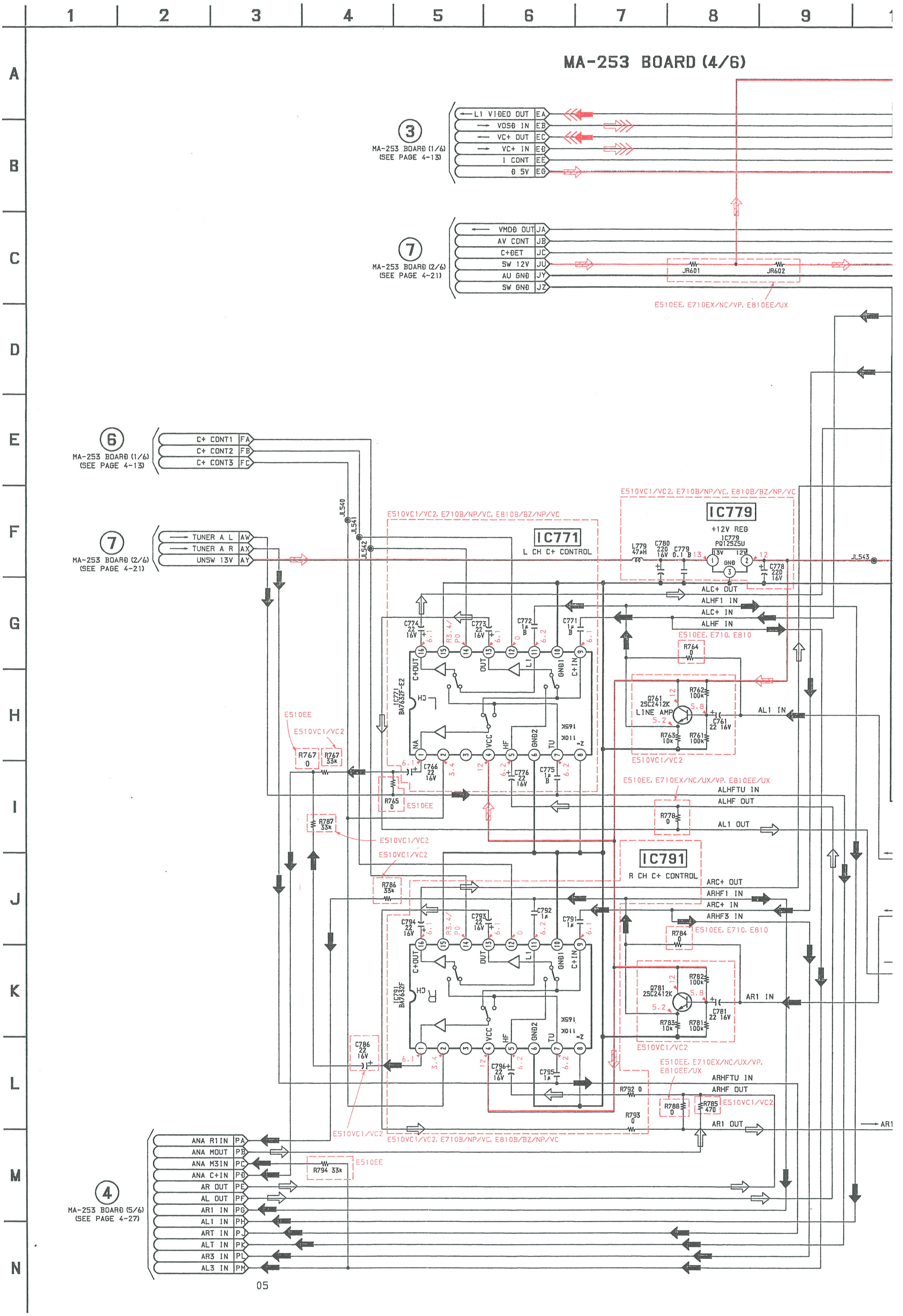
⓲ IC151 (74) REC/PB
2.5Vp-p (32kHz)



⓳ IC151 ㉛ REC/PB
4Vp-p (16MHz)



MA-253 BOARD (4/6)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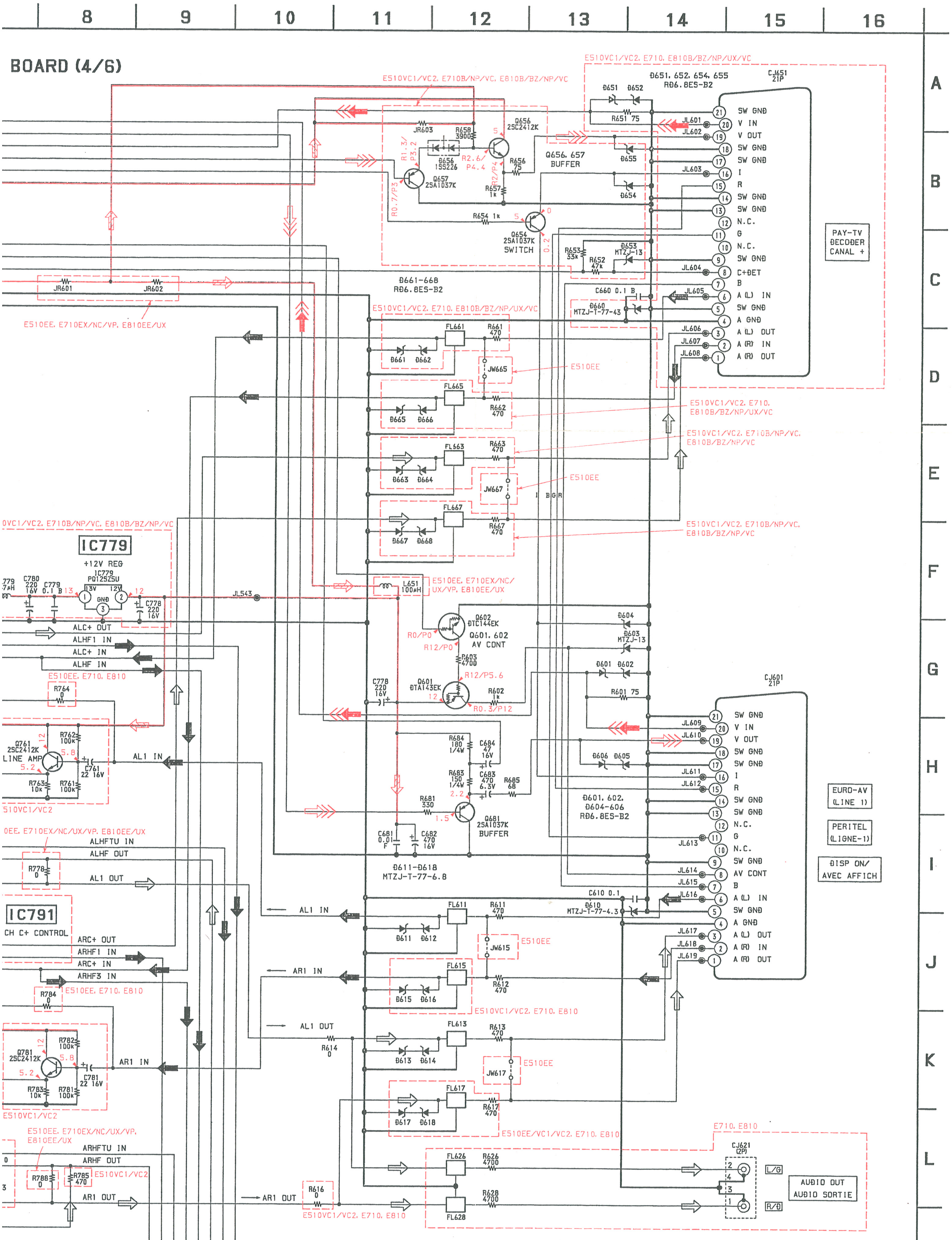
M
N
③
MA-253 BOARD (1/6)
(SEE PAGE 4-13)
L1 VIDEO OUT EA
VOSD IN EB
VC+ OUT EC
VC+ IN ED
I CONT EE
D 5V EG
⑦
MA-253 BOARD (2/6)
(SEE PAGE 4-21)
VMDD OUT JA
AV CONT JB
C+DET JC
SW 12V JU
AU GND JY
SW GND JZ
JR601
JR602
E510EE, E710EX/NC/VP, E810EE/UX
⑥
MA-253 BOARD (1/6)
(SEE PAGE 4-13)
C+ CONT1 FA
C+ CONT2 FB
C+ CONT3 FC
⑦
MA-253 BOARD (2/6)
(SEE PAGE 4-21)
TUNER A L AW
TUNER A R AX
UNSW 13V AY
JL540
JL541
JL542
JL543
E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC
IC771
L CH C+ CONTROL
IC771 BA7632F-E2
IC779
+12V REG
IC779 PQ12SZ5U
L779 47μH
C780 220 16V
C779 0.1 B
C778 220 16V
13V
12V
GND
ALC+ OUT
ALHF1 IN
ALC+ IN
ALHF IN
E510EE, E710, E810
R764 0
Q761 2SC2412K
LINE AMP
R762 100k
R763 10k
R761 100k
C761 22 16V
AL1 IN
E510VC1/VC2
E510EE, E710EX/NC/UX/VP, E810EE/UX
ALHFTU IN
ALHF OUT
R778 0
AL1 OUT
C774 22 16V
C773 22 16V
C772 1μ B
C771 1μ B
C766 22 16V
C776 22 16V
C775 1μ B
C+OUT
OUT
LI
GND1
C+IN
HJ
NA
VCC
HF
GND2
TU
E510EE
E510VC1/VC2
R767 0
R767 33k
R765 0
R787 33k
R786 33k
IC791
R CH C+ CONTROL
IC791 BA7632F
ARC+ OUT
ARHF1 IN
ARC+ IN
ARHF3 IN
R784 0
Q781 2SC2412K
R782 100k
R783 10k
R781 100k
C781 22 16V
AR1 IN
C794 22 16V
C793 22 16V
C792 1μ B
C791 1μ B
C786 22 16V
C796 22 16V
C795 1μ B
E510EE, E710EX/NC/UX/VP, E810EE/UX
ARHFTU IN
ARHF OUT
R792 0
R793 0
R788 0
R785 470
AR1 OUT
④
MA-253 BOARD (5/6)
(SEE PAGE 4-27)
ANA R1IN PA
ANA MOUT PB
ANA M3IN PC
ANA C+IN PD
AR OUT PE
AL OUT PF
AR1 IN PG
AL1 IN PH
ART IN PJ
ALT IN PK
AR3 IN PL
AL3 IN PM
R794 33k
05

BOARD (4/6)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A
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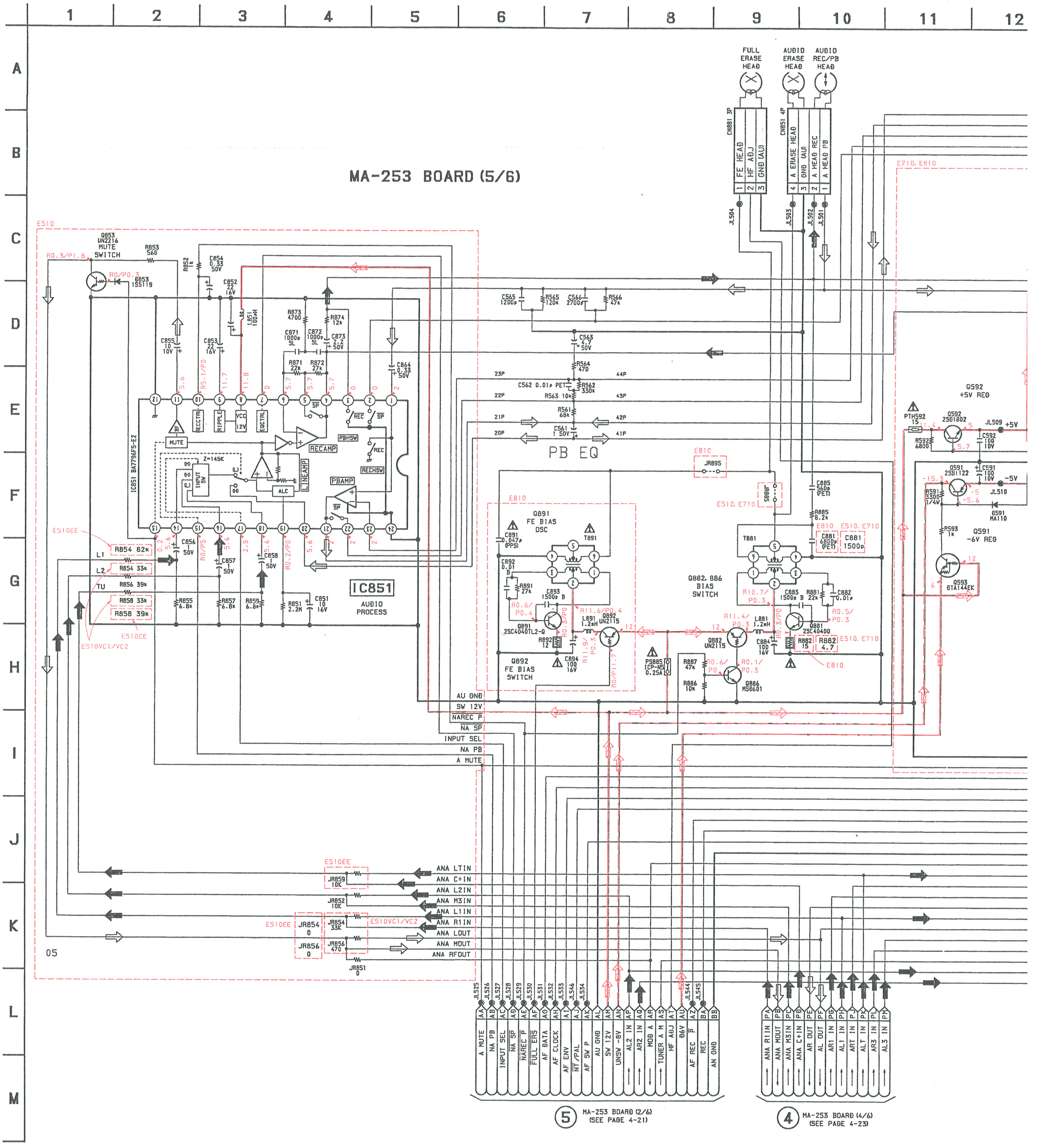
J
K
L
M
N
E510VC1/VC2, E710, E810B/BZ/NP/UX/VC
E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC
Ð651, 652, 654, 655
RÐ6.8ES-B2
CJ651
21P
Ð651 Ð652
R651 75
JR603
R658 3900
Q656 2SC2412K
Ð656 1SS226
Q657 2SA1037K
R656 75
R657 1k
Q656, 657 BUFFER
Ð655
Ð654
R654 1k
Q654 2SA1037K SWITCH
R653 33k
R652 47k
Ð653 MTZJ-13
JL601
JL602
JL603
JL604
JL605
JL606
JL607
JL608
SW GND
V IN
V OUT
SW GND
SW GND
I
R
SW GND
SW GND
N.C.
G
N.C.
SW GND
C+ÐET
B
A (L) IN
SW GND
A GND
A (L) OUT
A (R) IN
A (R) OUT
PAY-TV
ÐECOÐER
CANAL +
JR601
JR602
E510EE, E710EX/NC/VP, E810EE/UX
Ð661-668
RÐ6.8ES-B2
C660 0.1 B
Ð660 MTZJ-T-77-43
FL661
R661 470
Ð661 Ð662
JW665
E510EE
FL665
Ð665 Ð666
R662 470
FL663
R663 470
Ð663 Ð664
JW667
FL667
R667 470
Ð667 Ð668
E510VC1/VC2, E710,
E810B/BZ/NP/UX/VC
E510VC1/VC2, E710B/NP/VC,
E810B/BZ/NP/VC
I B G R
IC779
+12V REG
IC779
PQ12SZ5U
C780 220 16V
C779 0.1 B
C778 220 16V
JL543
L651 100μH
E510EE, E710EX/NC/UX/VP, E810EE/UX
Q602 ÐTC144EK
Q601, 602 AV CONT
R603 4700
Q601 ÐTA143EK
R602 1k
C778 220 16V
R0/P0
R12/P0
R12/P5.6
R0.3/P12
Ð604
Ð603 MTZJ-13
Ð601 Ð602
R601 75
CJ601 21P
ALC+ OUT
ALHF1 IN
ALC+ IN
ALHF IN
E510EE, E710, E810
R764 0
Q761 2SC2412K LINE AMP
R762 100k
R763 10k
R761 100k
C761 22 16V
AL1 IN
E510VC1/VC2
R684 180 1/4W
C684 47 16V
R683 150 1/4W
C683 470 6.3V
R685 68
R681 330
Q681 2SA1037K BUFFER
C681 0.01 F
C682 470 16V
Ð606 Ð605
Ð601, 602, Ð604-606 RÐ6.8ES-B2
Ð611-Ð618 MTZJ-T-77-6.8
JL609
JL610
JL611
JL612
JL613
JL614
JL615
JL616
JL617
JL618
JL619
AV CONT
EURO-AV (LINE 1)
PERITEL (LIGNE-1)
ÐISP ON/ AVEC AFFICH
E510EE, E710EX/NC/UX/VP, E810EE/UX
ALHFTU IN
ALHF OUT
R778 0
AL1 OUT
IC791
CH C+ CONTROL
ARC+ OUT
ARHF1 IN
ARC+ IN
ARHF3 IN
R784 0
E510EE, E710, E810
C610 0.1
Ð610 MTZJ-T-77-4.3
FL611
R611 470
Ð611 Ð612
JW615
FL615
R612 470
Ð615 Ð616
E510VC1/VC2, E710, E810
AR1 IN
AL1 OUT
FL613
R613 470
R614 0
Ð613 Ð614
JW617
FL617
R617 470
Ð617 Ð618
E510EE/VC1/VC2, E710, E810
Q781 2SC2412K
R782 100k
R783 10k
R781 100k
C781 22 16V
E510VC1/VC2
E510EE, E710EX/NC/UX/VP, E810EE/UX
ARHFTU IN
ARHF OUT
R788 0
R785 470
E510VC1/VC2
AR1 OUT
R616 0
E510VC1/VC2, E710, E810
E710, E810
FL626
R626 4700
FL628
R628 4700
CJ621 (2P)
L/G
R/D
AUÐIO OUT
AUÐIO SORTIE

- Signal path

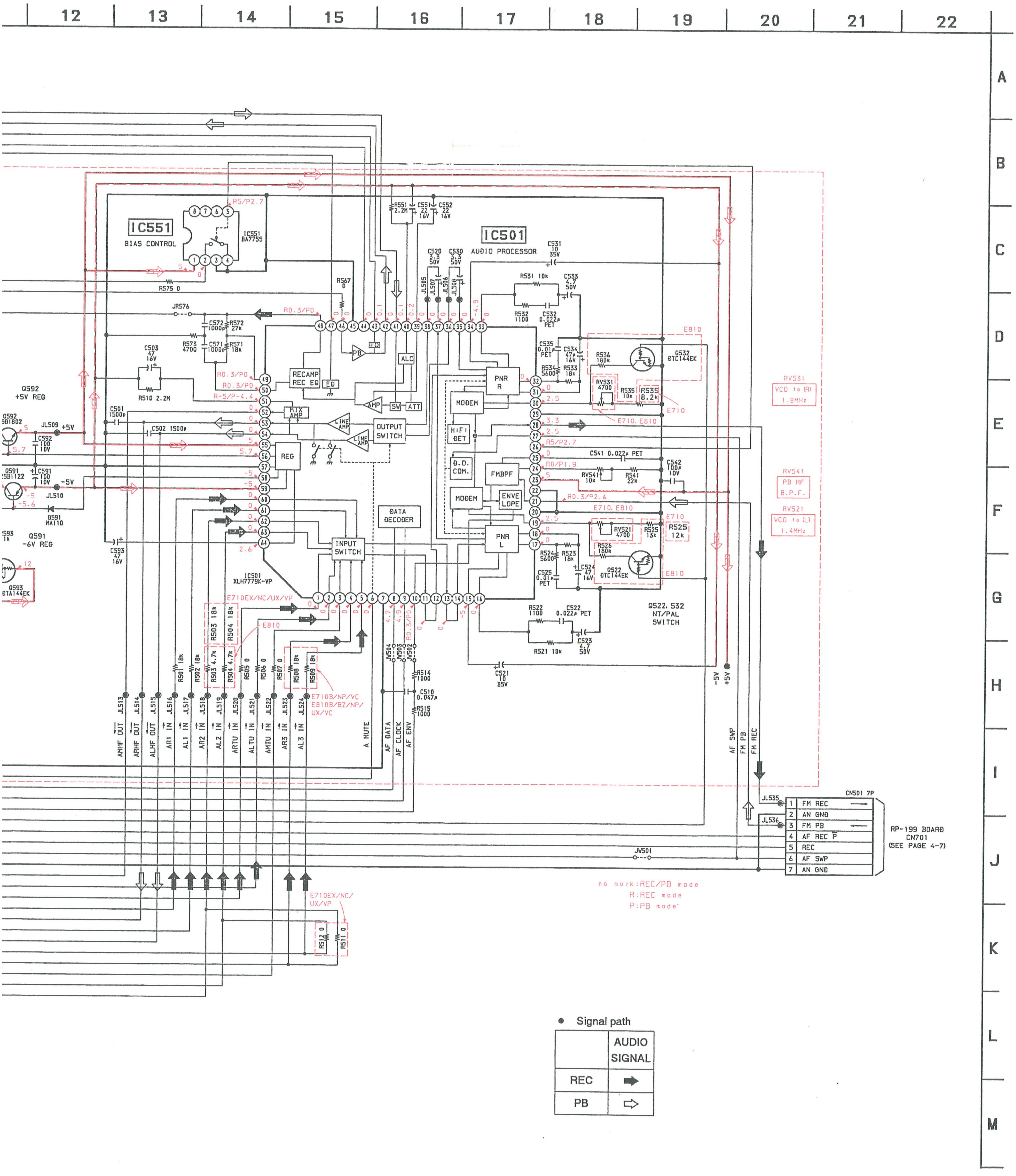
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	⇛	⇛⇛	➡
PB	⇨	⇨	⇨⇨	⇨

MA-253 (AUDIO) SCHEMATIC DIAGRAM **• See page 4-10 to 4-12 for printed wiring board.**

– Ref. No.: MA-253 Board; 2,000 series –



MA-253 BOARD (5/6)
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO REC/PB HEAD
CN881 3P
CN851 4P
1 FE HEAD
2 HF ADJ
3 GND (AU)
4 A ERASE HEAD
3 GND (AU)
2 A HEAD REC
1 A HEAD PB
JL504
JL503
JL502
JL501
E510
E710, E810
Q853 UN2216 MUTE SWITCH
D853 1SS119
R853 560
R852 1k
C854 0.33 50V
C852 22 16V
L851 100μH
R873 4700
R874 12k
C871 1000p SL
C872 1000p SL
C873 2.2 50V
R871 22k
R872 27k
C864 0.33 50V
C855 10 10V
C853 22 16V
MUTE
RECTRL
RIPPLE
VCC 12V
EQCTRL
RECAMP
PBHSW
REC
SP
RECHSW
PBAMP
LINEAMP
ALC
INPUT SW
Z=14SK
IC851 BA7796FS-E2
IC851
AUDIO PROCESS
C856 1 50V
C857 1 50V
C858 1 50V
R854 82k
R854 33k
R856 39k
R858 33k
R858 39k
R855 6.8k
R857 6.8k
R859 6.8k
R851 2.2k
C851 10 16V
L1
L2
TU
E510EE
E510VC1/VC2
C565 1200p
R565 120k
C566 2700p
R566 47k
C563 4.7 50V
R564 470
C562 0.01μ PET
R562 330k
R563 10k
R561 68k
C561 1 50V
23P
22P
21P
20P
44P
43P
42P
41P
PB EQ
E810
JR895
E510, E710
JR885
C885 560p (PET)
R885 8.2k
Q891 FE BIAS OSC
T891
C891 0.047μ (PPS)
C892 0.01
R891 27k
C893 1500p B
Q891 2SC4040TL2-Q
R892 12
L891 1.2mH
Q892 UN2115
C894 100 16V
Q892 FE BIAS SWITCH
T881
Q882, 886 BIAS SWITCH
C881 6800p (PET)
C881 1500p
C883 1500p B
R881 22k
C882 0.01μ
L881 1.2mH
Q881 2SC4040Q
Q882 UN2115
C884 100 16V
R882 15
R882 4.7
PS885 ICP-N5 0.25A
R887 47k
R886 10k
Q886 HSB601
Q592 +5V REG
Q592 2SD1802
PTH592 15
R592 6800
C592 100 10V
JL509 +5V
Q591 2SB1122
C591 100 10V
-5V
R591 3300 1/4W
JL510
D591 MA110
R593 1k
Q591 -6V REG
Q593 DTA144EK
AU GND
SW 12V
NAREC P
NA SP
INPUT SEL
NA PB
A MUTE
ANA LTIN
ANA C+IN
ANA L2IN
ANA M3IN
ANA L1IN
ANA R1IN
ANA LOUT
ANA MOUT
ANA RFOUT
JR859 10K
JR852 10K
JR854 0
JR854 33K
JR856 0
JR856 470
JR851 0
05
JL525
JL526
JL527
JL528
JL529
JL530
JL531
JL532
JL533
JL546
JL534
JL544
JL545
AA A MUTE
AB NA PB
AC INPUT SEL
AD NA SP
AE NAREC P
AF FULL ERS
AG AF DATA
AH AF CLOCK
AI AF ENV
AJ NT/PAL
AK AF SW P
AL AU GND
AM SW 12V
AN UNSW -8V
AP AL2 IN
AQ AR2 IN
AR MOD A
AS TUNER A M
AT HF ADJ
AU 06V
AZ AF REC P
BA REC
BB AN GND
PA ANA R1IN
PB ANA MOUT
PC ANA M3IN
PD ANA C+IN
PE AR OUT
PF AL OUT
PG AR1 IN
PH AL1 IN
PJ ART IN
PK ALT IN
PL AR3 IN
PM AL3 IN
⑤ MA-253 BOARD (2/6) (SEE PAGE 4-21)
④ MA-253 BOARD (4/6) (SEE PAGE 4-23)
1 2 3 4 5 6 7 8 9 10 11 12
A B C D E F G H I J K L M


12
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21
22
A
B
C
D
E
F
G
H
I
J
K
L
M
IC551
BIAS CONTROL
IC551 BA7755
IC501
AUDIO PROCESSOR
IC501 XLH7779K-VP
R5/P2.7
R575 0
R567 0
JR576
R551 2.2M
C551 22 16V
C552 22 16V
C520 3.3 50V
C530 3.3 50V
C531 10 35V
R531 10k
C533 4.7 50V
R532 1100
C532 0.022μ PET
C572 1000p
R572 27k
R573 4700
C571 1000p
R571 18k
C503 47 16V
R510 2.2M
RECAMP
REC EQ
EQ
PB
ALC
AMP
SW
ATT
MIX AMP
LINE AMP
OUTPUT SWITCH
REG
INPUT SWITCH
DATA DECODER
PNR R
PNR L
MODEM
HIFI DET
D.O. COM.
FMBPF
ENVE LOPE
Q592 +5V REG
Q592 2SD1802
JL509 +5V
C592 100 10V
Q591 2SB1122
C591 100 10V
-5V
JL510
Q591 MA110
Q593 1k
Q591 -6V REG
Q593 DTA144EK
C501 1500p
C502 1500p
C593 47 16V
C535 0.01μ PET
C534 47μ 16V
R534 5600
R533 18k
R536 180k
Q532 DTC144EK
RV531 4700
R535 10k
R535 8.2k
E810
E710
E710, E810
C541 0.022μ PET
C542 100μ 10V
RV541 10k
R541 22k
RV521 4700
R525 13k
R525 12k
R526 180k
R524 5600
R523 18k
C525 0.01μ PET
C524 47 16V
Q522 DTC144EK
Q522, 532 NT/PAL SWITCH
R522 1100
C522 0.022μ PET
C523 4.7 50V
R521 10k
C521 10 35V
C510 0.047μ
R514 1000
R515 1000
JW504
JW503
JW502
E710EX/NC/UX/VP
R503 18k
R504 18k
R501 18k
R502 18k
R503 4.7k
R504 4.7k
R505 0
R506 0
R507 0
R508 18k
R509 18k
E710B/NP/VC
E810B/BZ/NP/UX/VC
JL513 AMHF OUT
JL514 ARHF OUT
JL515 ALHF OUT
JL516 AR1 IN
JL517 AL1 IN
JL518 AR2 IN
JL519 AL2 IN
JL520 ARTU IN
JL521 ALTU IN
JL522 AMTU IN
JL523 AR3 IN
JL524 AL3 IN
A MUTE
AF DATA
AF CLOCK
AF ENV
JL505
JL507
JL506
JL508
-5V
+5V
AF SWP
FM PB
FM REC
RV531 VCO fo (R) 1.8MHz
RV541 PB RF B.P.F.
RV521 VCO fo (L) 1.4MHz
JL535
JL536
CN501 7P
1 FM REC
2 AN GND
3 FM PB
4 AF REC P
5 REC
6 AF SWP
7 AN GND
RP-199 BOARD CN701 (SEE PAGE 4-7)
JW501
E710EX/NC/UX/VP
R512 0
R511 0
no mark:REC/PB mode
R:REC mode
P:PB mode

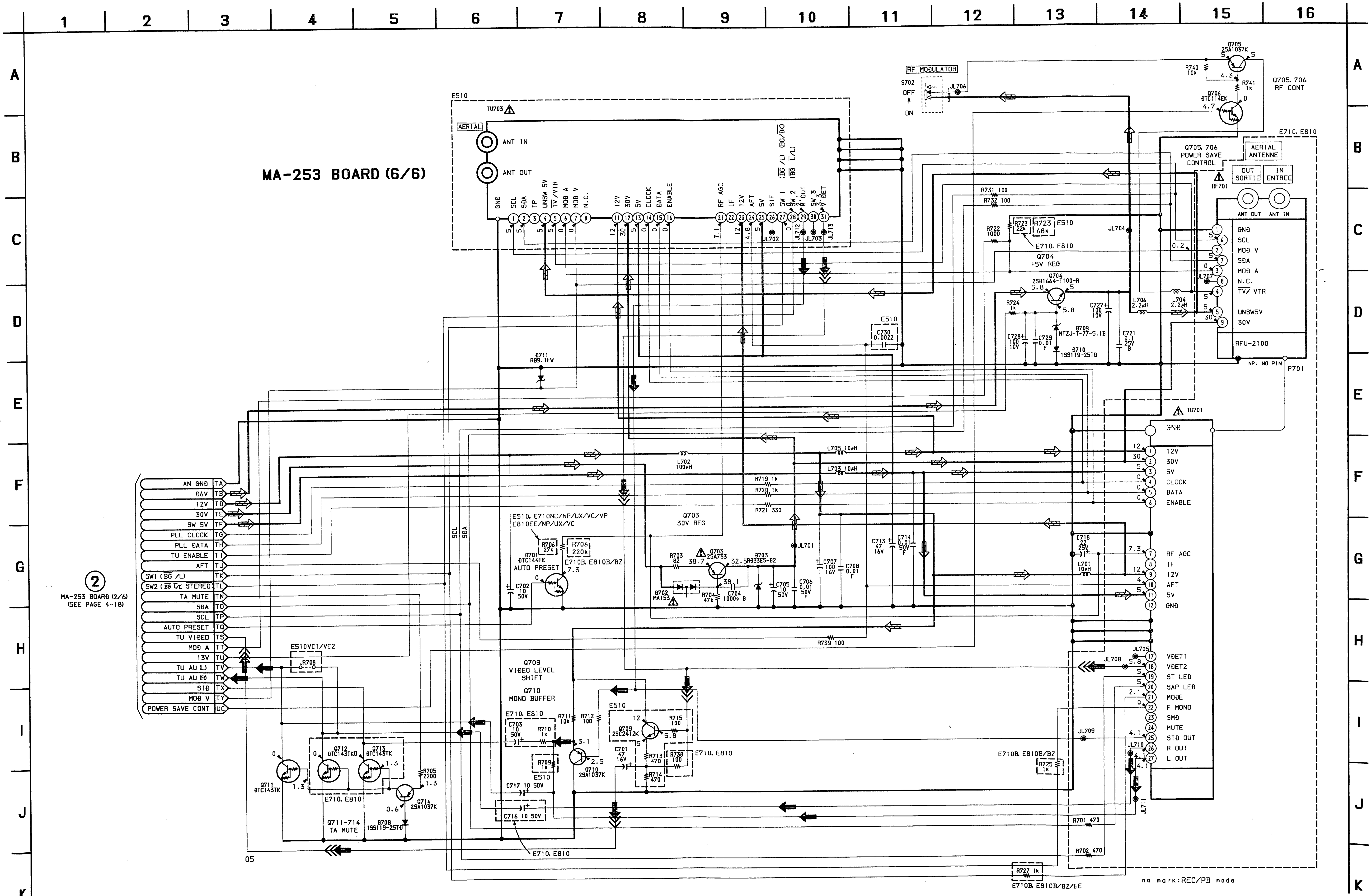
● Signal path

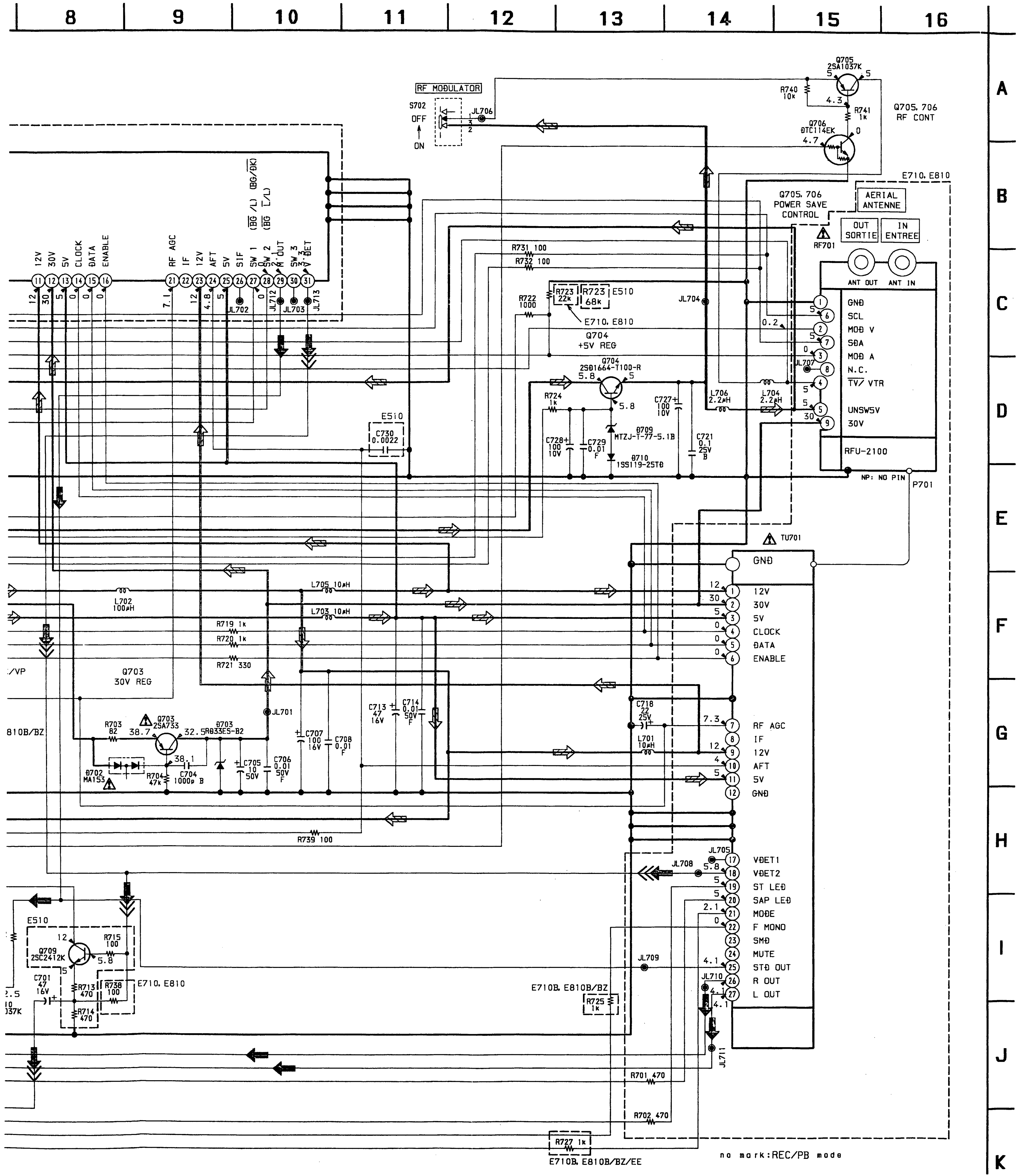
	AUDIO SIGNAL
REC	➡
PB	⇨

MA-253 (TUNER) SCHEMATIC DIAGRAM

• See page 4-10 to 4-12 for printed wiring board.

– Ref. No.: MA-253 Board; 2,000 series –


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
K
MA-253 BOARD (6/6)
E510
TU703
AERIAL
ANT IN
ANT OUT
GND
SCL
SDA
TP
UNSW 5V
TV/VTR
MOD A
MOD V
N.C.
12V
30V
5V
CLOCK
DATA
ENABLE
RF AGC
IF
12V
AFT
5V
SIF
SW 1
SW 2
R OUT
SW 3
V-DET
RF MODULATOR
S702
OFF
ON
JL706
Q705 2SA1037K
R740 10k
R741 1k
Q706 DTC114EK
Q705, 706 RF CONT
E710, E810
Q705, 706 POWER SAVE CONTROL
AERIAL ANTENNE
OUT SORTIE
IN ENTREE
RF701
ANT OUT
ANT IN
R731 100
R732 100
R722 1000
R723 22k
R723 68k
E510
E710, E810
Q704 +5V REG
Q704 2SB1664-T100-R
R724 1k
C727 100 10V
C728 100 10V
C729 0.01 F
D709 MTZJ-T-77-5.1B
D710 1SS119-25TD
C721 0.1 25V B
L706 2.2µH
L704 2.2µH
JL704
JL707
GND
SCL
MOD V
SDA
MOD A
N.C.
TV/ VTR
UNSW5V
30V
RFU-2100
NP: NO PIN
P701
E510
C730 0.0022
D711 RD9.1EW
TU701
GND
L705 10µH
L702 100µH
L703 10µH
R719 1k
R720 1k
R721 330
12V
30V
5V
CLOCK
DATA
ENABLE
RF AGC
IF
12V
AFT
5V
GND
AN GND
D6V
12V
30V
SW 5V
PLL CLOCK
PLL DATA
TU ENABLE
AFT
SW1 (BG /L)
SW2 (BG L/L STEREO)
TA MUTE
SDA
SCL
AUTO PRESET
TU VIDEO
MOD A
13V
TU AU (L)
TU AU (R)
STD
MOD V
POWER SAVE CONT
TA
TB
TD
TE
TF
TG
TH
TI
TJ
TK
TL
TN
TO
TP
TQ
TS
TT
TU
TV
TW
TX
TY
UC
②
MA-253 BOARD (2/6)
(SEE PAGE 4-18)
E510, E710NC/NP/UX/VC/VP
E810EE/NP/UX/VC
R706 27k
R706 220k
Q701 DTC144EK
AUTO PRESET
E710B, E810B/BZ
C702 10 50V
Q703 30V REG
Q703 2SA733
D703 RD33ES-B2
R703 82
D702 MA153
R704 47k
C704 1000p B
C705 10 50V
C706 0.01 50V F
C707 100 16V
C708 0.01 F
JL701
C713 47 16V
C714 0.01 50V F
C718 22 25V
L701 10µH
R739 100
E510VC1/VC2
JR708
Q709 VIDEO LEVEL SHIFT
Q710 MONO BUFFER
E710, E810
C703 10 50V
R710 1k
R711 10k
R712 100
R709 1k
E510
Q710 2SA1037K
C717 10 50V
C716 10 50V
E510
Q709 2SC2412K
R715 100
C701 47 16V
R713 470
R738 100
R714 470
E710, E810
Q711 DTC143TK
Q712 DTC143TKO
Q713 DTC143TK
R705 2200
Q714 2SA1037K
E710, E810
Q711-714 TA MUTE
D708 1SS119-25TD
VDET1
VDET2
ST LED
SAP LED
MODE
F MONO
SMD
MUTE
STD OUT
R OUT
L OUT
JL705
JL708
JL709
JL710
JL711
E710B, E810B/BZ
R725 1k
R701 470
R702 470
R727 1k
E710B, E810B/BZ/EE
no mark: REC/PB mode


8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
K
RF MODULATOR
S702
OFF
ON
JL706
Q705 2SA1037K
R740 10k
R741 1k
Q706 DTC114EK
Q705, 706 RF CONT
E710, E810
Q705, 706 POWER SAVE CONTROL
AERIAL ANTENNE
OUT SORTIE
IN ENTREE
RF701
ANT OUT
ANT IN
GND
SCL
MOD V
SDA
MOD A
N.C.
TV/VTR
UNSW5V
30V
RFU-2100
NP: NO PIN
P701
12V
30V
5V
CLOCK
DATA
ENABLE
RF AGC
IF
AFT
SIF
SW 1
SW 2
M OUT
SW 3
V·DET
R731 100
R732 100
R722 1000
R723 22k
R723 68k
E510
E710, E810
Q704 +5V REG
Q704 2SB1644-T100-R
R724 1k
C727 100 10V
D709 MTZJ-T-77-5.1B
D710 1SS119-25TD
C728 100 10V
C729 0.01 F
C721 0.1 25V B
L706 2.2µH
L704 2.2µH
JL704
JL707
C730 0.0022
JL702
JL703
JL712
JL713
TU701
GND
12V
30V
5V
CLOCK
DATA
ENABLE
RF AGC
IF
12V
AFT
5V
GND
VDET1
VDET2
ST LED
SAP LED
MODE
F MONO
SMD
MUTE
STD OUT
R OUT
L OUT
L705 10µH
L702 100µH
L703 10µH
R719 1k
R720 1k
R721 330
Q703 30V REG
R703 82
Q703 2SA733
D703 RD33ES-B2
D702 MA153
R704 47k
C704 1000p B
C705 10 50V
C706 0.01 50V F
C707 100 16V
C708 0.01 F
C713 47 16V
C714 0.01 50V F
C718 22 25V
L701 10µH
JL701
R739 100
JL705
JL708
JL709
JL710
JL711
E510
Q709 2SC2412K
R715 100
C701 47 16V
R713 470
R738 100
R714 470
E710, E810
E710B, E810B/BZ
R725
R701 470
R702 470
R727 1k
E710B, E810B/BZ/EE
no mark:REC/PB mode

- Signal path

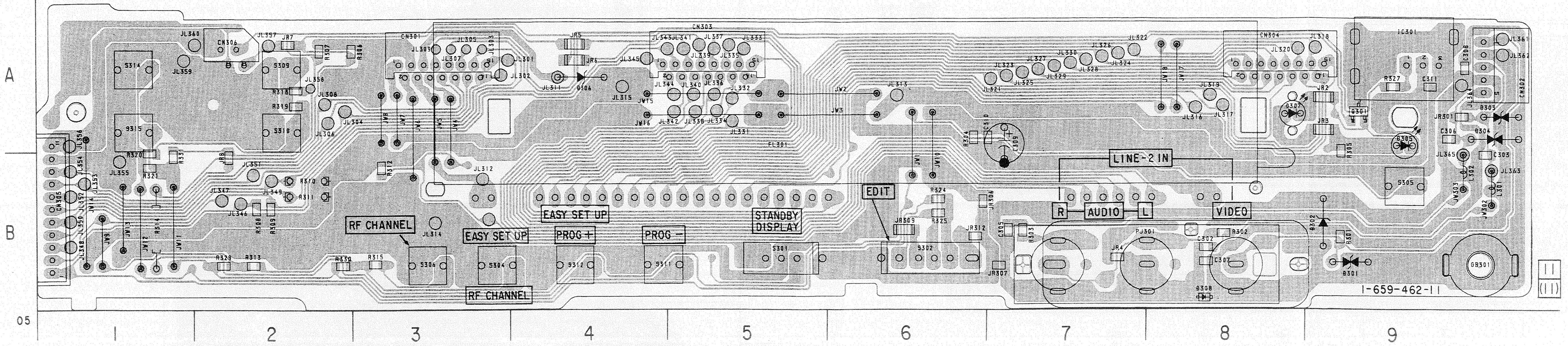
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡➡	➡➡➡	➡
PB	⇨	⇨⇨	⇨⇨⇨	⇨

There are cases that the part isn't mounted in this model is printed on this diagram.

HI-25 (FL DRIVER), DM-49 (MODE CONTROL), MF-285 (POWER SWITCH), LE-13 (LED) PRINTED WIRING BOARDS

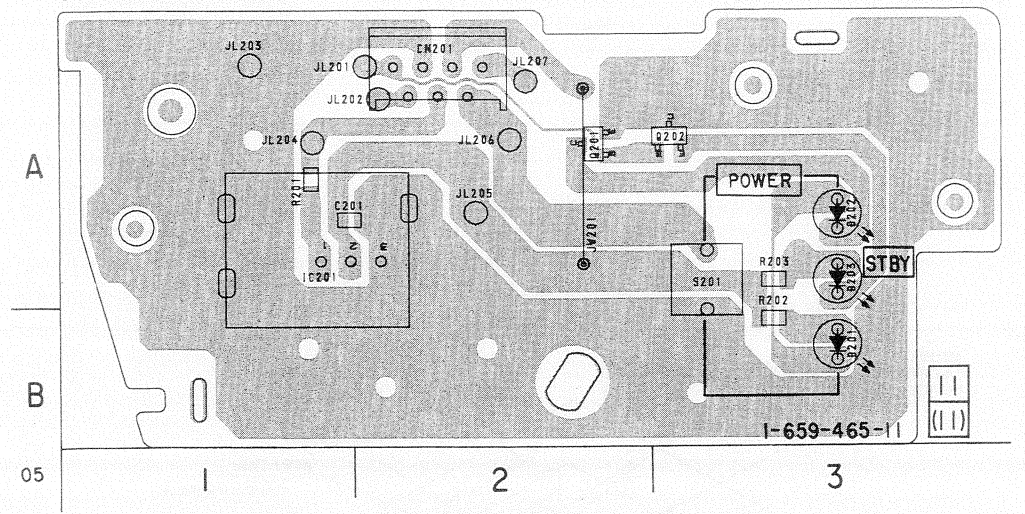
– Ref. No.: HI-25 Board, DM-49 Board, MF-285 Board and LE-13 Board; 1,000 series –

HI-25 BOARD


A
B
05
1
2
3
4
5
6
7
8
9
CN301
CN302
CN303
CN304
CN305
CN306
IC301
RF CHANNEL
EASY SET UP
EASY SET UP
PROG +
PROG –
STANDBY DISPLAY
EDIT
LINE-2 IN
R
AUDIO
L
VIDEO
RF CHANNEL
1-659-462-11

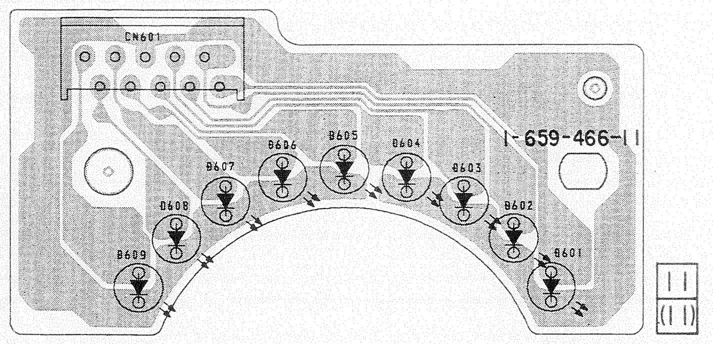
HI-25 BOARD	
CN301	A-3
CN302	A-9
CN303	A-5
CN304	A-8
CN305	B-1
CN306	A-2
D301	B-9
D302	B-9
D303	A-9
D304	A-9
D306	A-4
IC301	A-9

MF-285 BOARD

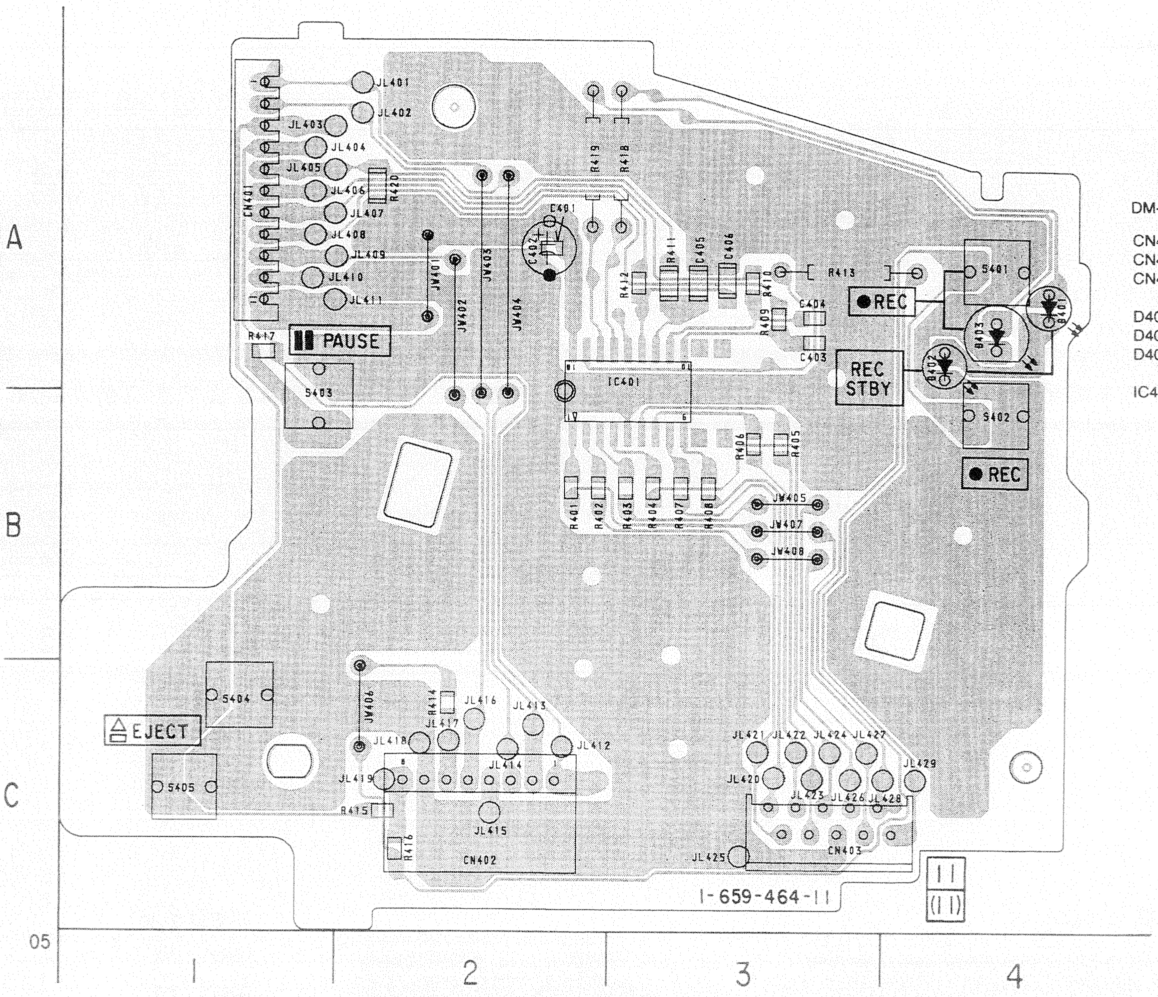

A
B
05
1
2
3
CN201
IC201
Q202
POWER
STBY
S201
1-659-465-11

MF-285 BOARD	
CN201	A-2
D201	B-3
D202	A-3
D203	A-3
IC201	A-1
Q201	A-2
Q202	A-3

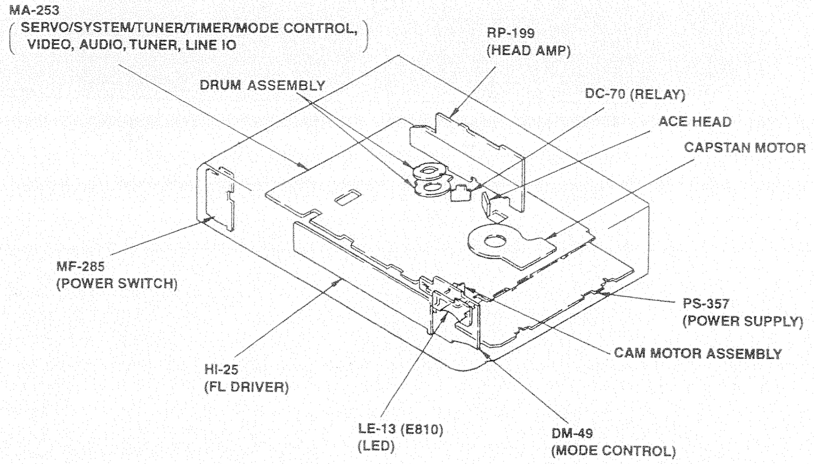
LE-13 BOARD


CN601
D601
D602
D603
D604
D605
D606
D607
D608
D609
1-659-466-11

DM-49 BOARD

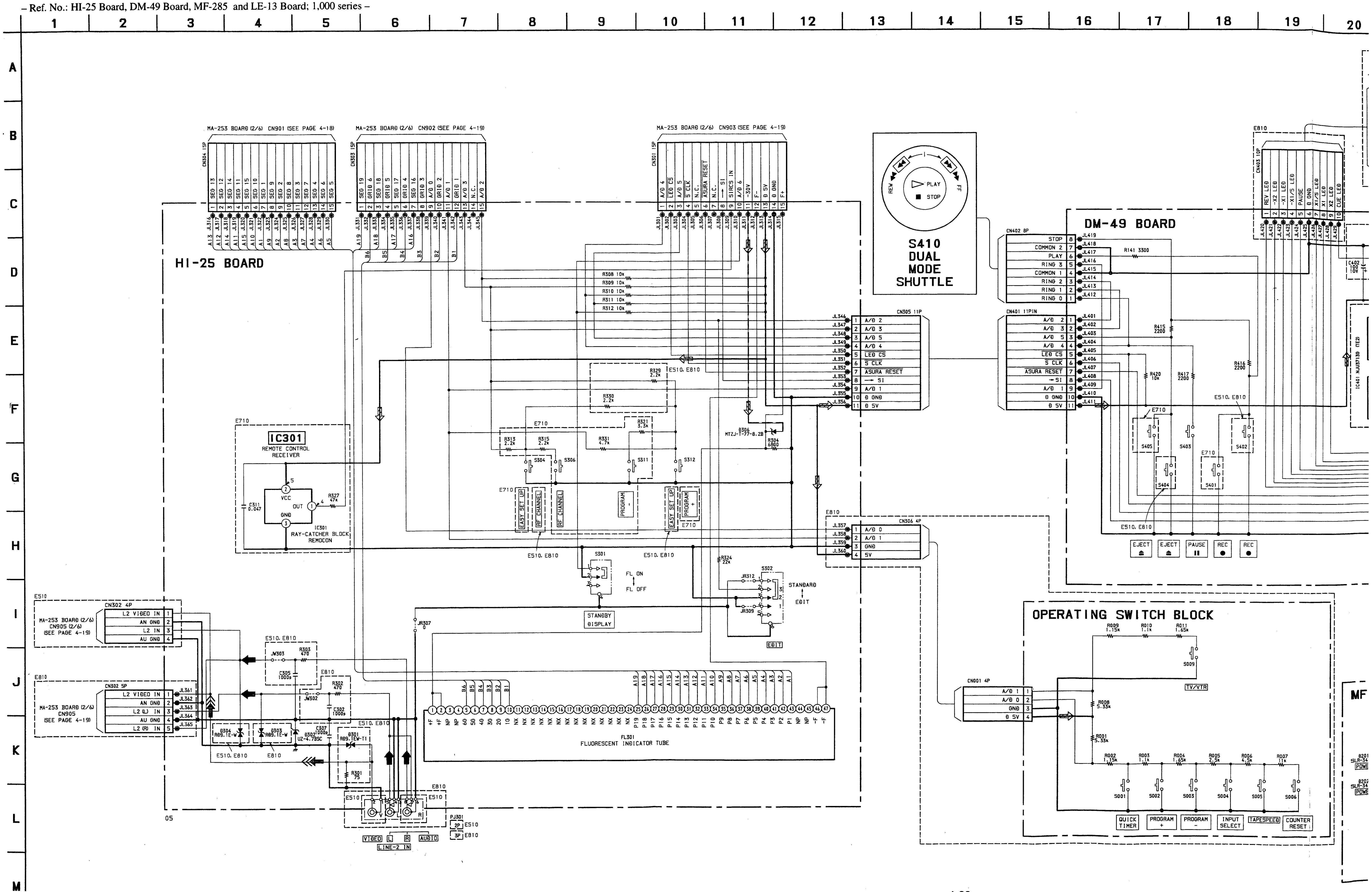

A
B
C
1
2
3
4
05
CN401
JL401
JL402
JL403
JL404
JL405
JL406
JL407
JL408
JL409
JL410
JL411
R420
R417
PAUSE
S403
JW401
JW402
JW403
JW404
C401
C402
R419
R418
R411
R412
C405
C406
R410
R409
R413
C404
C403
REC
REC STBY
IC401
S401
S402
D401
D402
D403
R406
R405
R401
R402
R403
R404
R407
R408
JW405
JW407
JW408
S404
S405
EJECT
JW406
R414
JL416
JL413
JL417
JL418
JL412
JL414
JL419
R415
JL415
R416
CN402
JL421
JL422
JL424
JL427
JL420
JL423
JL426
JL428
JL429
JL425
CN403
1-659-464-11

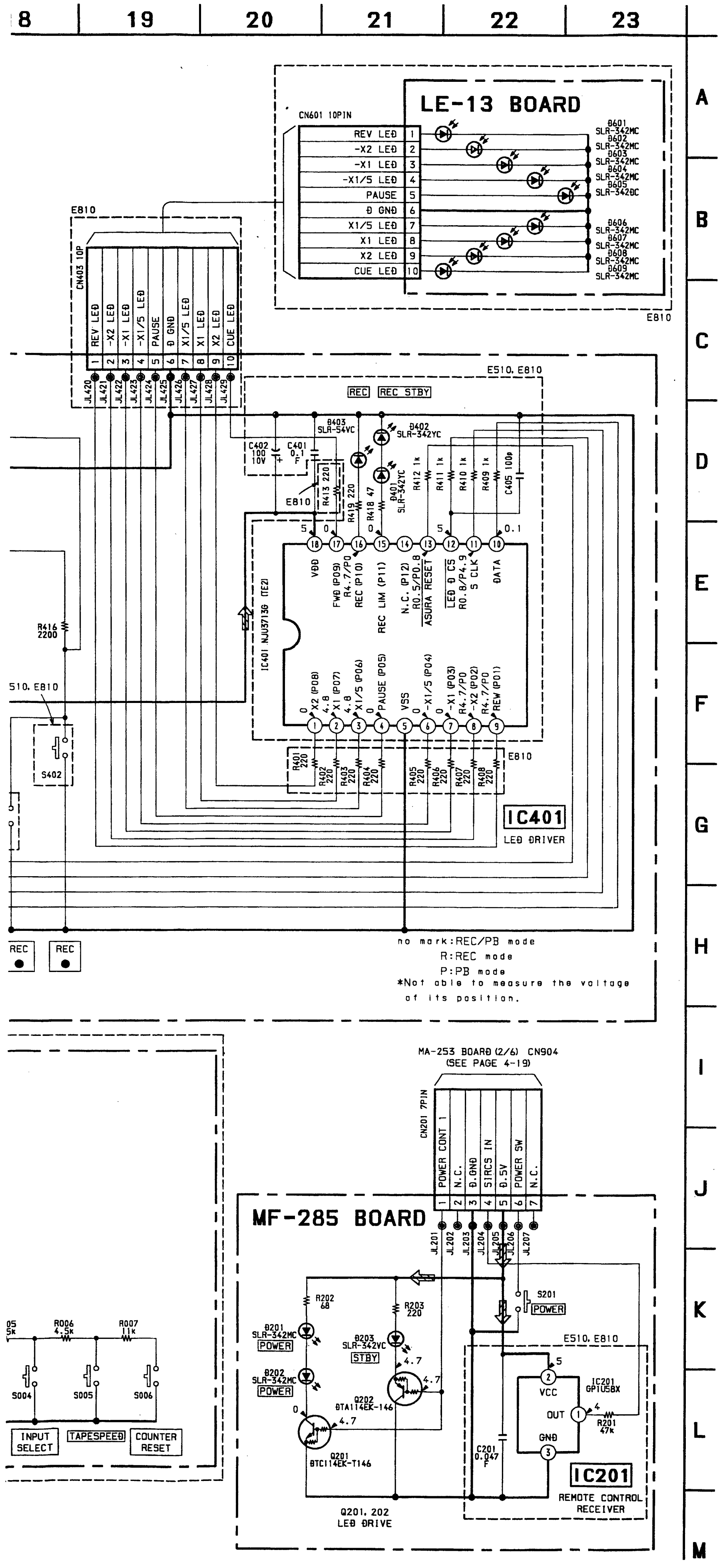
DM-49 BOARD	
CN401	A-1
CN402	C-2
CN403	C-3
D401	A-4
D402	A-4
D403	A-4
IC401	B-C


MA-253
(SERVO/SYSTEM/TUNER/TIMER/MODE CONTROL, VIDEO, AUDIO, TUNER, LINE IO)
RP-199
(HEAD AMP)
DRUM ASSEMBLY
DC-70 (RELAY)
ACE HEAD
CAPSTAN MOTOR
MF-285
(POWER SWITCH)
PS-357
(POWER SUPPLY)
CAM MOTOR ASSEMBLY
HI-25
(FL DRIVER)
LE-13 (E810)
(LED)
DM-49
(MODE CONTROL)

HI-25 (FL DRIVER), DM-49 (MODE CONTROL), MF-285 (POWER SWITCH), LE-13 (LED) SCHEMATIC DIAGRAM

– Ref. No.: HI-25 Board, DM-49 Board, MF-285 and LE-13 Board; 1,000 series –


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
A B C D E F G H I J K L M
MA-253 BOARD (2/6) CN901 (SEE PAGE 4-18)
MA-253 BOARD (2/6) CN902 (SEE PAGE 4-19)
MA-253 BOARD (2/6) CN903 (SEE PAGE 4-19)
CN304 15P
CN303 15P
CN301 15P
SEG 13
SEG 12
SEG 14
SEG 11
SEG 15
SEG 10
SEG 9
SEG 8
SEG 2
SEG 3
SEG 1
SEG 7
SEG 4
SEG 6
SEG 5
SEG 19
GRID 6
SEG 18
GRID 5
SEG 17
GRID 4
SEG 16
GRID 3
A/D 0
GRID 2
A/D 1
GRID 1
A/D 3
N.C.
A/D 2
A/D 4
LED CS
A/D 5
S CLK
N.C.
ASURA RESET
N.C.
→ SI
SIRCS IN
A/D 6
-30V
F-
D 5V
D GND
F+
HI-25 BOARD
R308 10k
R309 10k
R310 10k
R311 10k
R312 10k
R329 2.2k
R330 2.2k
R321 3.3k
R313 2.2k
R315 2.2k
R331 4.7k
S304
S306
S311
S312
E510, E810
E710
IC301
REMOTE CONTROL RECEIVER
VCC
OUT
GND
R327 47k
C311 0.047
IC301 RAY-CATCHER BLOCK REMOCON
EASY SET UP
RF CHANNEL
RF CHANNEL
PROGRAM -
EASY SET UP
PROGRAM +
S301
FL ON
FL OFF
STANDBY DISPLAY
R324 22k
S302
JR312
JR309
STANDARD
EDIT
EDIT
D306 MTZJ-T-77-8.2B
R304 6800
CN305 11P
A/D 2
A/D 3
A/D 5
A/D 4
LED CS
S CLK
ASURA RESET
→ SI
A/D 1
D GND
D 5V
E810
CN306 4P
A/D 0
A/D 1
GND
5V
S410
DUAL
MODE
SHUTTLE
REW
FF
PLAY
STOP
DM-49 BOARD
CN402 8P
STOP
COMMON 2
PLAY
RING 3
COMMON 1
RING 2
RING 1
RING 0
R141 3300
CN401 11PIN
A/D 2
A/D 3
A/D 5
A/D 4
LED CS
S CLK
ASURA RESET
→ SI
A/D 1
D GND
D 5V
R415 2200
R420 10k
R417 2200
R416 2200
S405
S403
S402
S404
S401
E510, E810
EJECT
EJECT
PAUSE
REC
REC
E810
CN403 10P
REV LED
-X2 LED
-X1 LED
-X1/5 LED
PAUSE
D GND
X1/5 LED
X1 LED
X2 LED
CUE LED
C402 100 10V
IC401 NJU3713D (TE2)
OPERATING SWITCH BLOCK
R009 1.15k
R010 1.1k
R011 1.65k
S009
TV/VTR
CN001 4P
A/D 1
A/D 0
GND
D 5V
R008 5.33k
R001 5.33k
R002 1.15k
R003 1.1k
R004 1.65k
R005 2.5k
R006 4.5k
R007 11k
S001
S002
S003
S004
S005
S006
QUICK TIMER
PROGRAM +
PROGRAM -
INPUT SELECT
TAPESPEED
COUNTER RESET
MF
S201 SLR-34
POWER
S202 SLR-34
POWER
E510
CN302 4P
MA-253 BOARD (2/6) CN905 (2/6) (SEE PAGE 4-19)
L2 VIDEO IN
AN GND
L2 IN
AU GND
E810
CN302 5P
MA-253 BOARD (2/6) CN905 (SEE PAGE 4-19)
L2 VIDEO IN
AN GND
L2 (L) IN
AU GND
L2 (R) IN
JW303
R303 470
C305 1000p
JW302
R302 470
C302 1000p
C307 1000p
D302 UZ-4.7BSC
D304 RB9.1E-W
D303 RB9.1E-W
D301 RB9.1EW-T1
R301 75
JR307 0
E510, E810
E810
FL301 FLUORESCENT INDICATOR TUBE
E510
E810
VIDEO
L
R
AUDIO
LINE-2 IN
PJ301
2P E510
3P E810
05


LE-13 BOARD
CN601 10PIN
REV LED
-X2 LED
-X1 LED
-X1/5 LED
PAUSE
D GND
X1/5 LED
X1 LED
X2 LED
CUE LED
D601–D609 SLR-342MC
E810
CN403 10P
E510, E810
REC
REC STBY
D401
D402 SLR-342YC
D403 SLR-54VC
C401 0.1
C402 100 10V
IC401 NJU3713D (TE2)
VDD
VSS
DATA
CLK
LED D CS
ASURA RESET
REC LIM (P11)
FWD (P09)
REC (P10)
X2 (P08)
X1 (P07)
X1/5 (P06)
PAUSE (P05)
-X1/5 (P04)
-X1 (P03)
-X2 (P02)
REW (P01)
IC401
LED DRIVER
R416 2200
S402
REC
no mark:REC/PB mode
R:REC mode
P:PB mode
*Not able to measure the voltage of its position.
MA-253 BOARD (2/6) CN904
(SEE PAGE 4-19)
CN201 7PIN
POWER CONT 1
N.C.
D.GND
SIRCS IN
D.5V
POWER SW
N.C.
MF-285 BOARD
S201
POWER
R202 68
R203 220
D201 SLR-342MC POWER
D202 SLR-342MC POWER
D203 SLR-542VC STBY
Q201 DTC114EK-T146
Q202 DTA114EK-146
Q201, 202
LED DRIVE
C201 0.047
R201 47k
IC201 GP1U5BX
VCC
OUT
GND
IC201
REMOTE CONTROL RECEIVER
S004
S005
S006
R006 4.3k
R007 11k
INPUT SELECT
TAPESPEED
COUNTER RESET
8
19
20
21
22
23
A
B
C
D
E
F
G
H
I
J
K
L
M

- Signal path

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡➡	➡➡➡	➡
PB	⇨	⇨⇨	⇨⇨⇨	⇨

MODE CONTROL

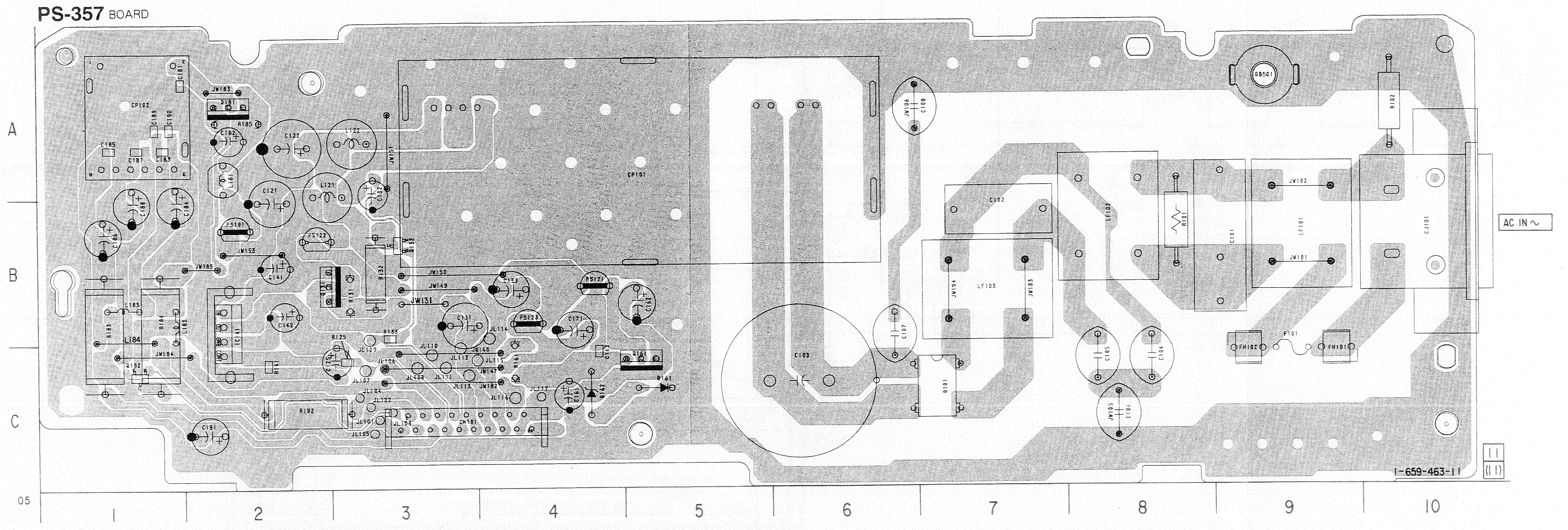
HI-25 DM-49 MF-285 LE-13

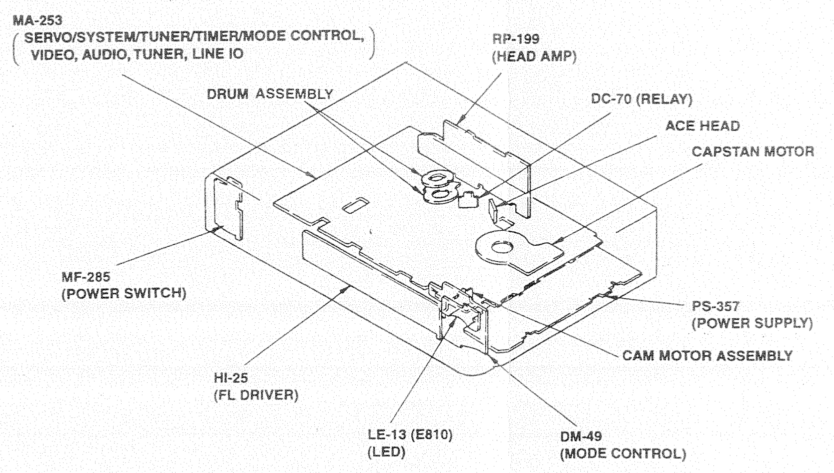
There are cases that the part isn't mounted in this model is printed on this diagram.

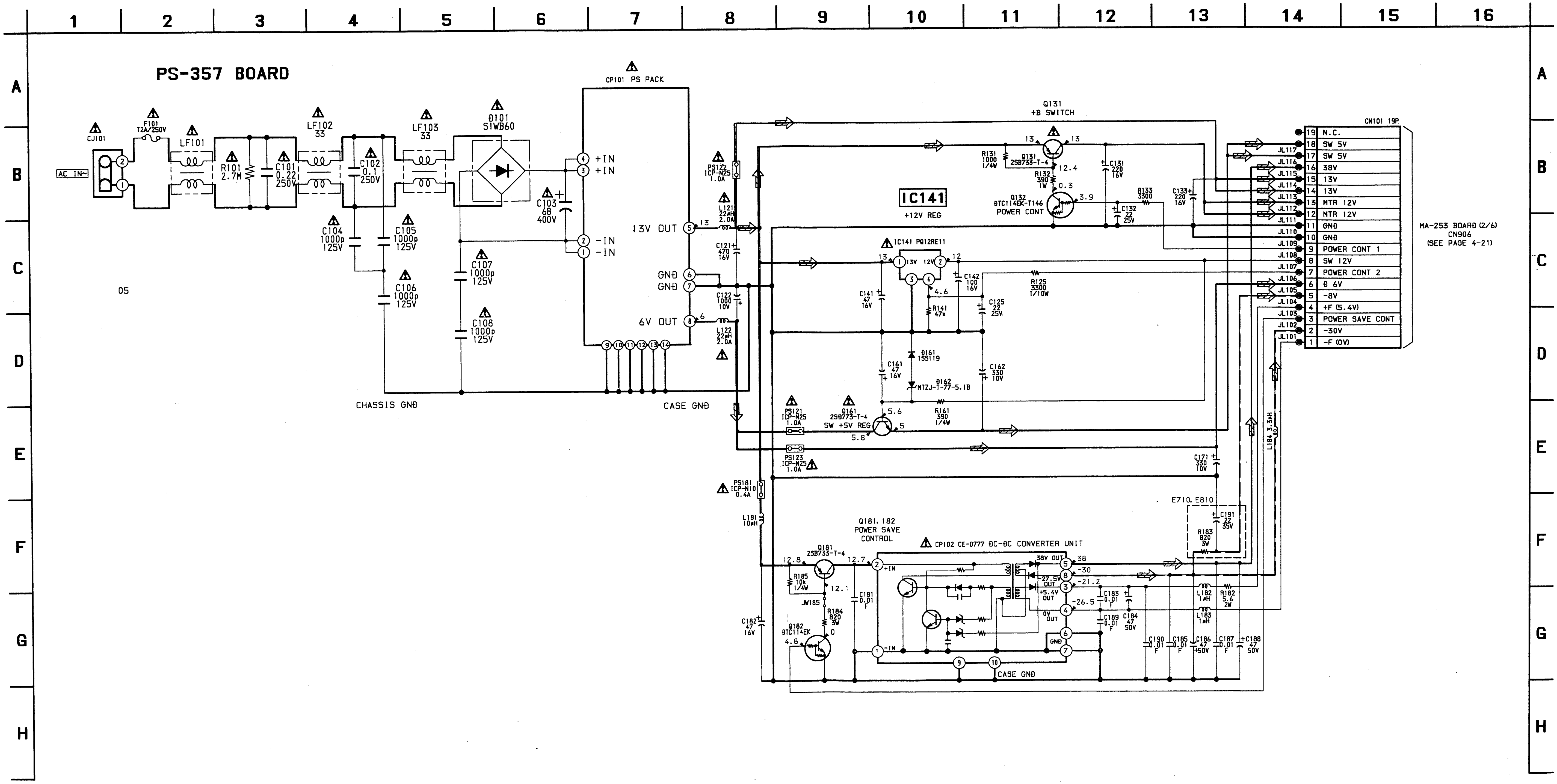
PS-357 (POWER SUPPLY) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

– Ref. No.: PS-357 Board; 1,000 series –

PS-357 BOARD	
CJ101	C-3
CN101	C-3
D101	C-7
D161	C-5
D162	C-4
IC141	B-2
Q131	B-2
Q132	B-3
Q161	C-5
Q181	A-1
Q182	C-1


PS-357 BOARD
A
B
C
05
1
2
3
4
5
6
7
8
9
10
AC IN ~
1-659-463-11
CP101
CP102
C103
C102
LF103
LF102
LF101
CJ101
JW101
JW102
F101
FH101
FH102
D101
R101
R102
C101
C104
C105
C106
C107
C108
C121
C122
L121
L122
C141
C142
C171
IC141
R132
R131
PS181
PS122
PS121
PS123
CN101
R182
C191
C181
C182
C183
C184
C185
C186
C187
C188
C189
C190
L183
L184
R183
R184
JW163
JW164
JW165
JW131
JW149
JW150
JW151
JW153
D161
D162
R161
R162
R125


MA-253
SERVO/SYSTEM/TUNER/TIMER/MODE CONTROL, VIDEO, AUDIO, TUNER, LINE IO
RP-199
(HEAD AMP)
DRUM ASSEMBLY
DC-70 (RELAY)
ACE HEAD
CAPSTAN MOTOR
MF-285
(POWER SWITCH)
PS-357
(POWER SUPPLY)
CAM MOTOR ASSEMBLY
HI-25
(FL DRIVER)
LE-13 (E810)
(LED)
DM-49
(MODE CONTROL)


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
PS-357 BOARD
AC IN~
CJ101
F101 T2A/250V
LF101
R101 2.7M
C101 0.22 250V
LF102 33
C102 0.1 250V
LF103 33
D101 S1WB60
C103 68 400V
C104 1000p 125V
C105 1000p 125V
C106 1000p 125V
C107 1000p 125V
C108 1000p 125V
05
CHASSIS GND
CP101 PS PACK
+IN
+IN
-IN
-IN
13V OUT
GND
GND
6V OUT
CASE GND
PS122 ICP-N25 1.0A
L121 22µH 2.0A
C121 470 16V
C122 1000 10V
L122 22µH 2.0A
Q131 +B SWITCH
R131 1000 1/4W
Q131 2SB733-T-4
12.4
R132 390 1W
0.3
Q132 DTC114EK-T146 POWER CONT
3.9
C131 220 16V
C132 22 25V
R133 3300
C133 220 16V
IC141
+12V REG
IC141 PQ12RE11
13V
12V
4.6
C141 47 16V
C142 100 16V
R141 47k
C125 22 25V
R125 3300 1/10W
D161 1SS119
D162 MTZJ-T-77-5.1B
C161 47 16V
C162 330 10V
PS121 ICP-N25 1.0A
Q161 2SD773-T-4
SW +5V REG
5.6
5.8
5
R161 390 1/4W
PS123 ICP-N25 1.0A
C171 330 10V
PS181 ICP-N10 0.4A
L181 10µH
Q181, 182 POWER SAVE CONTROL
Q181 2SB733-T-4
12.8
12.7
12.1
R185 10k 1/4W
JW185
R184 820 3W
Q182 DTC114EK
4.8
0
C181 0.01 F
C182 47 16V
CP102 CE-0777 DC-DC CONVERTER UNIT
+IN
-IN
38V OUT
-27.5V OUT
+5.4V OUT
0V OUT
GND
CASE GND
38
-30
-21.2
-26.5
C183 0.01 F
C189 0.01 F
C184 47 50V
E710, E810
C191 22 35V
R183 820 3W
L182 1µH
R182 5.6 2W
L183 1µH
L184 3.3µH
C190 0.01 F
C185 0.01 F
C186 47 50V
C187 0.01 F
C188 47 50V
CN101 19P
JL117
JL116
JL115
JL114
JL113
JL112
JL111
JL110
JL109
JL108
JL107
JL106
JL105
JL104
JL103
JL102
JL101
19 N.C.
18 SW 5V
17 SW 5V
16 38V
15 13V
14 13V
13 MTR 12V
12 MTR 12V
11 GND
10 GND
9 POWER CONT 1
8 SW 12V
7 POWER CONT 2
6 D 6V
5 -8V
4 +F (5.4V)
3 POWER SAVE CONT
2 -30V
1 -F (0V)
MA-253 BOARD (2/6) CN906 (SEE PAGE 4-21)

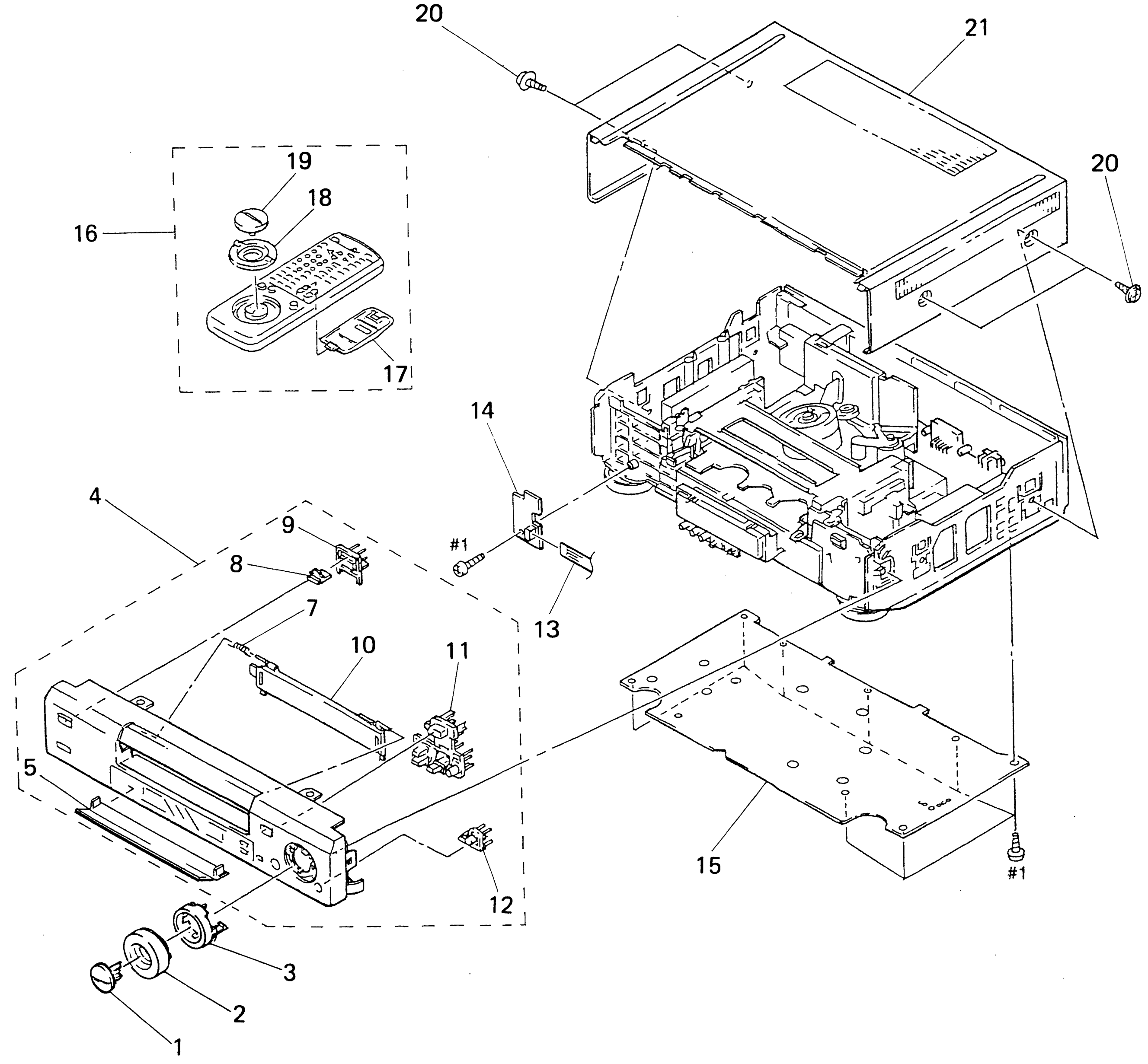
SECTION 5
REPAIR PARTS LIST

5-1. EXPLODED VIEWS

NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

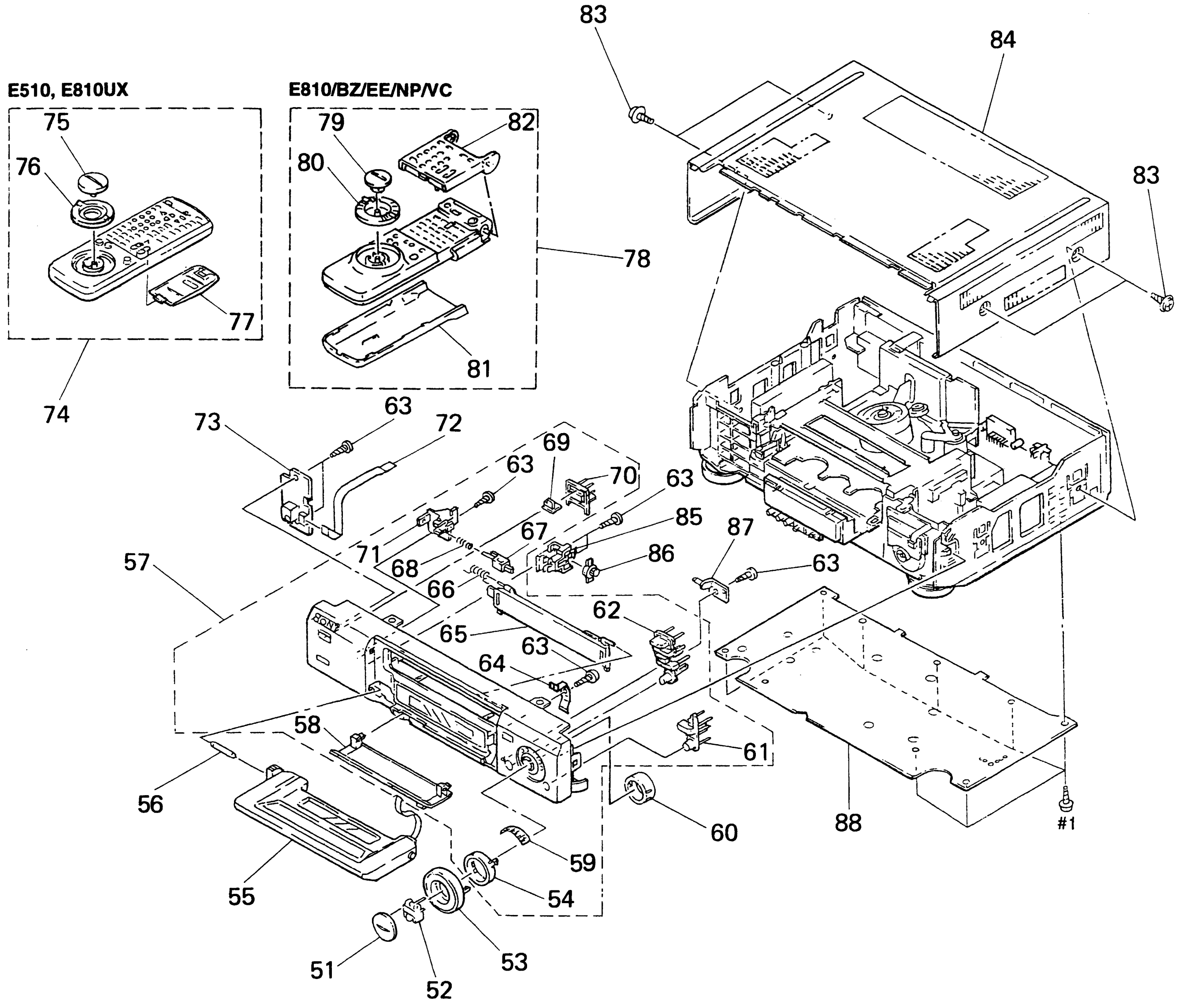
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

5-1-1. FRONT PANEL AND CABINET ASSEMBLIES (E710)



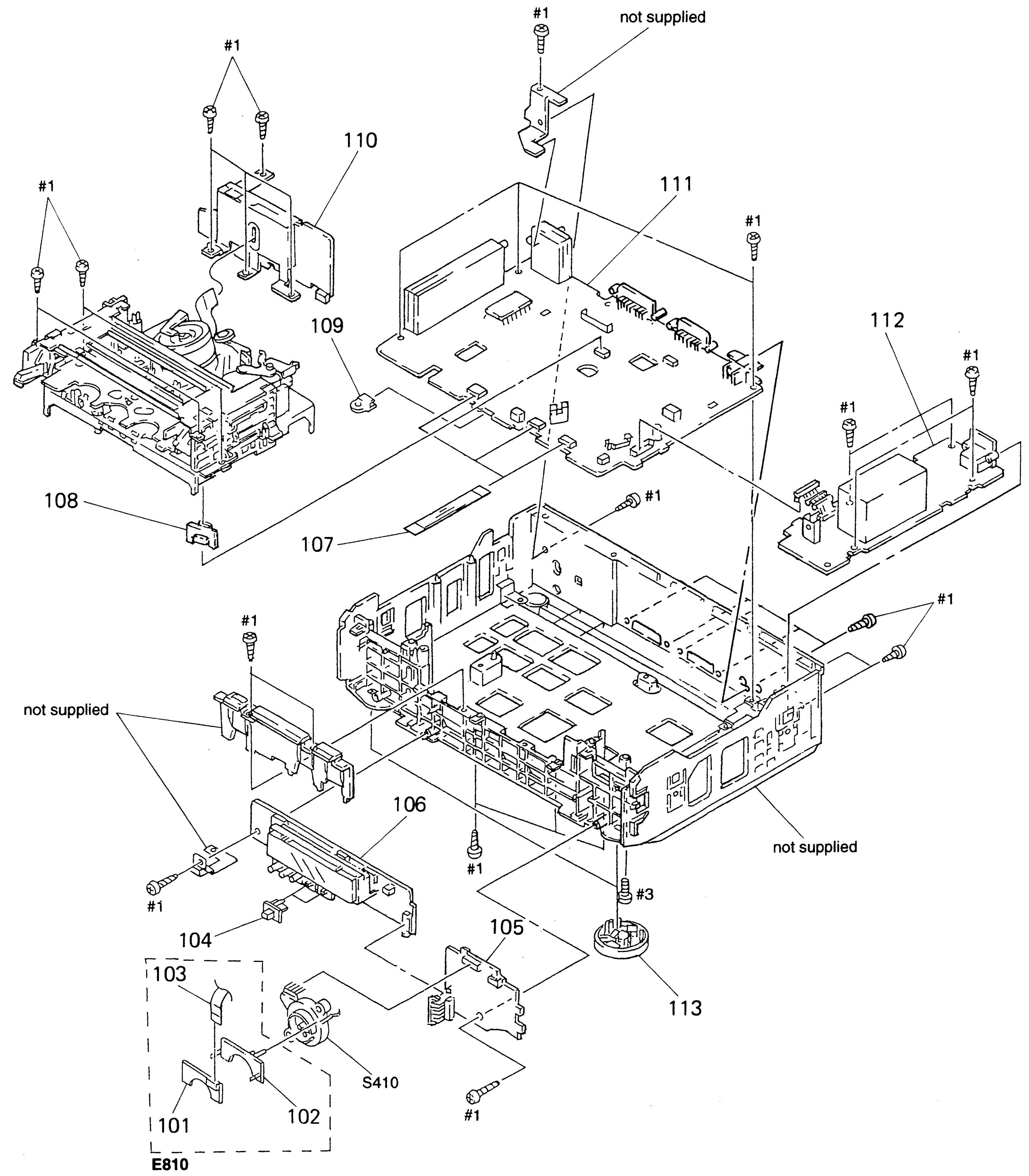
Ref. No.	Part No.	Description	Remark
1	X-3945-659-1	BUTTON ASSY, FUNCTION (EXCEPT E710B)	
1	X-3945-842-1	BUTTON ASSY, FUNCTION (E710B)	
2	3-966-886-41	RING, SHUTTLE	
3	3-966-890-21	RING, MODE (EXCEPT E710B)	
3	3-966-890-31	RING, MODE (E710B)	
4	X-3945-574-1	PANEL ASSY, FRONT (E710VP)	
4	X-3945-668-1	PANEL ASSY, FRONT (E710NP)	
4	X-3945-669-1	PANEL ASSY, FRONT (E710NC)	
4	X-3945-670-1	PANEL ASSY, FRONT (E710EX/UX)	
4	X-3945-671-1	PANEL ASSY, FRONT (E710B)	
4	X-3945-841-1	PANEL ASSY, FRONT (E710VC)	
5	3-966-214-21	DOOR (A), JACK (EXCEPT E710B)	
5	3-966-214-31	DOOR (A), JACK (E710B)	
7	3-953-432-01	SPRING (GE), FL	
8	3-946-611-12	TIP, POWER BUTTON	
9	3-966-213-01	BUTTON, POWER	
10	3-966-858-11	DOOR, CASSETTE (EXCEPT E710B)	
10	3-966-858-61	DOOR, CASSETTE (E710B)	
11	3-966-217-41	BUTTON (A), EP	
12	3-966-219-01	BUTTON (A), REC	
13	1-776-227-11	CABLE, FLAT (FMM-13) 7P	
* 14	A-6782-863-A	MF-285 BOARD, COMPLETE	
15	3-966-226-01	PLATE, BOTTOM	
16	1-473-487-51	REMOTE COMMANDER (RMT-V186D) (E710NC/NP/VC/VP)	
16	1-473-487-61	REMOTE COMMANDER (RMT-V186E) (E710EX/UX)	
16	1-473-487-71	REMOTE COMMANDER (RMT-V186F) (E710B)	
17	3-708-817-01	COVER, BATTERY	
18	3-957-513-11	RING, SHUTTLE	
19	X-3944-446-2	BUTTON ASSY (C) (EXCEPT7 E710B)	
19	X-3944-557-2	BUTTON ASSY (C) (E710B)	
20	3-710-901-11	SCREW (TP3X8), CASE	
* 21	3-966-664-01	CASE, UPPER	

5-1-2. FRONT PANEL AND CABINET ASSEMBLIES
(E510, E810)



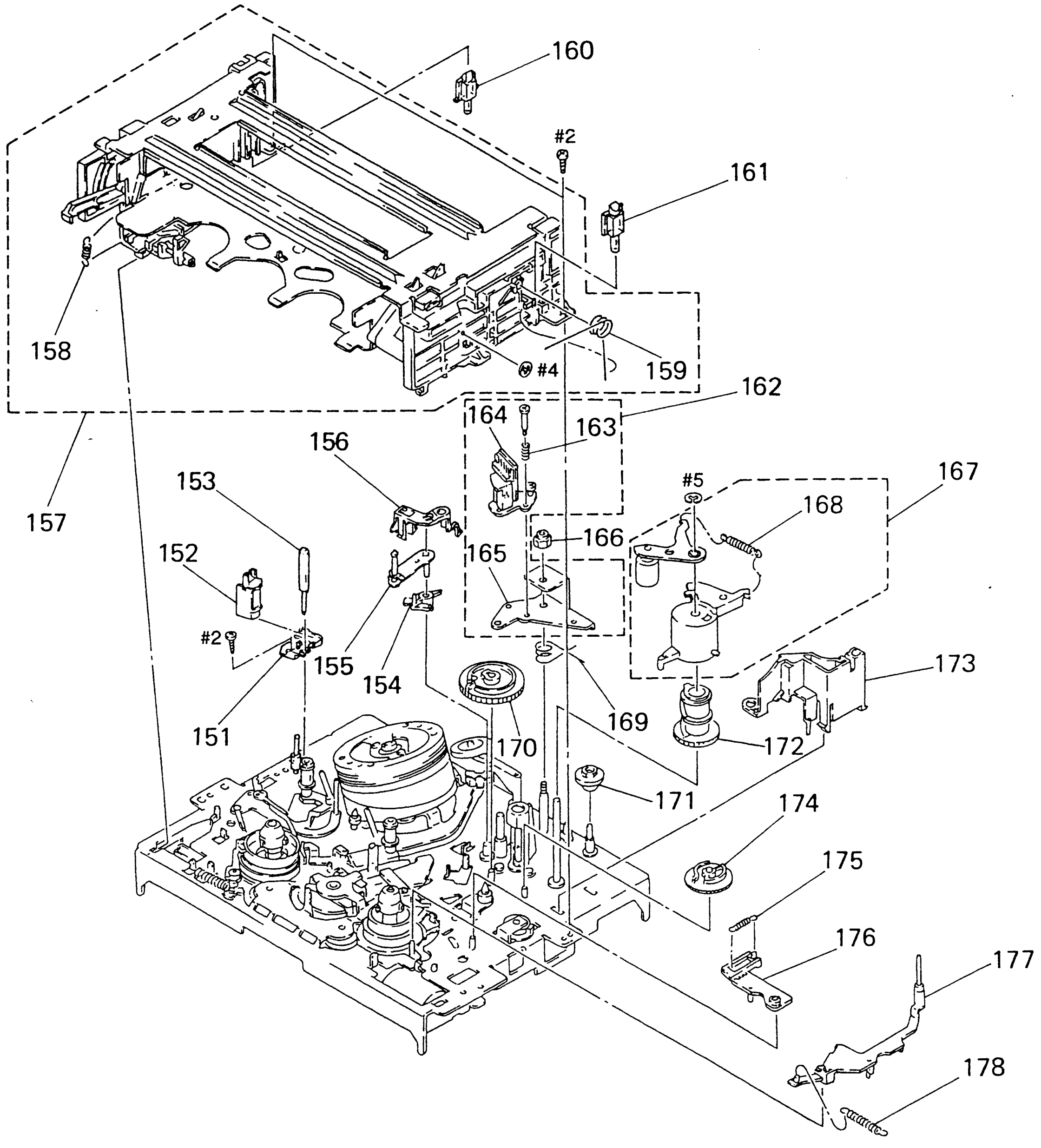
Ref. No.	Part No.	Description	Remark
51	3-966-252-01	BUTTON, PB/STOP (EXCEPT E810B/BZ)	
51	3-966-252-21	BUTTON, PB/STOP (E810B/BZ)	
52	3-966-251-01	BASE, BUTTON	
53	3-966-253-01	RING, SHUTTLE	
54	3-966-807-01	PLATE, INDICATION, SHUTTLE (E810EE/NP/UX/VC)	
54	3-966-807-21	PLATE, INDICATION, SHUTTLE (E510)	
54	3-966-807-31	PLATE, INDICATION, SHUTTLE (E810B/BZ)	
55	1-473-518-31	SWITCH BLOCK, CONTROL (E810EE/NP/UX/VC)	
55	1-473-518-41	SWITCH BLOCK, CONTROL (E810B/BZ)	
55	1-473-518-51	SWITCH BLOCK, CONTROL (E510)	
* 56	3-960-077-11	SHAFT (LEFT), FULCRUM	
57	A-6780-288-A	PANEL ASSY, FRONT (E810VC)	
57	A-6780-290-A	PANEL ASSY, FRONT (E810B/BZ)	
57	A-6780-292-A	PANEL ASSY, FRONT (E810NP)	
57	A-6780-294-A	PANEL ASSY, FRONT (E810EE)	
57	A-6780-296-A	PANEL ASSY, FRONT (E810UX)	
57	A-6780-298-A	PANEL ASSY, FRONT (E510VC1/VC2)	
57	A-6780-300-A	PANEL ASSY, FRONT (E510EE)	
58	3-966-661-01	DOOR (P), JACK (E810EE/NP/UX/VC)	
58	3-966-661-21	DOOR (C), JACK (E810B/BZ)	
58	3-966-661-11	DOOR (C), JACK (E510)	
59	3-966-241-01	PLATE, LIGHT GUIDE, SHUTTLE (E810)	
60	3-966-250-01	BASE, SHUTTLE RING	
61	3-966-242-11	BUTTON (B), REC	
62	3-966-245-01	BUTTON (B), EP	
63	3-968-554-01	SCREW (WN1411 D2.5 EJOT K25)	
* 64	3-960-556-01	SPRING, DOOR	
65	3-960-094-31	DOOR, CASSETTE (E810EE/NP/UX/VC)	
65	3-960-094-41	DOOR, CASSETTE (E810B/BZ)	
65	3-960-094-61	DOOR, CASSETTE (E510)	
66	3-953-432-01	SPRING (GE), FL	
67	3-944-564-01	CLAW, LOCK	
68	3-957-388-01	SPRING, COMPRESSION	
69	3-946-611-12	TIP, POWER BUTTON	
70	3-966-213-01	BUTTON, POWER	
* 71	3-957-548-11	HOLDER, LOCK CLAW	
72	1-776-227-11	CABLE, FLAT (FMM-13) 7P	
* 73	A-6782-838-A	MF-285 BOARD, COMPLETE	
74	1-473-486-21	REMOTE COMMANDER (RMT-V185A) (E810UX)	
74	1-473-487-41	REMOTE COMMANDER (RMT-V186C) (E510EE/VC1/VC2)	
75	X-3944-446-2	BUTTON ASSY (C) (E510, E810UX)	
76	3-957-513-11	RING, SHUTTLE (E510, E810UX)	
77	3-708-817-01	COVER, BATTERY (E510, E810UX)	
78	1-473-450-11	REMOTE COMMANDER (RMT-V187) (E810EE/NP/VC)	
78	1-473-450-21	REMOTE COMMANDER (RMT-V187A) (E810B/BZ)	
79	X-3945-558-2	BUTTON ASSY (E) (E810B/BZ/EE/NP/VC)	
80	3-957-513-51	RING, SHUTTLE (E810B/BZ/EE/NP/VC)	
81	3-709-048-31	COVER, REMOTE CONTROL SLUDE (E810B/BZ/EE/NP/VC)	
82	3-709-051-01	COVER, REMOTE CONTROL (V187) (E810EE/NP/VC)	
82	3-709-051-11	COVER, REMOTE CONTROL (V187A) (E810B/BZ)	
83	3-710-901-11	SCREW (TP3X8), CASE	
* 84	3-966-664-11	CASE, UPPER (E510EE, E810EE)	
* 84	3-966-664-01	CASE, UPPER (EXCEPT E510EE, E810EE)	
* 85	3-960-076-11	PLATE (LEFT), FULCRUM, DOOR	
86	3-961-745-01	DAMPER, OIL	
87	X-3944-614-1	PLATE (RIGHT) ASSY, FULCRUM	
88	3-966-226-01	PLATE, BOTTOM	

5-1-3. CHASSIS ASSEMBLY



Ref. No.	Part No.	Description	Remark
* 101	A-6782-839-A	LE-13 BOARD, COMPLETE (E810)	
102	3-966-254-01	HOLDER, LE PC BOARD (E810)	
103	1-776-228-11	CABLE, FLAT (FDL-1) 10P (E810)	
104	3-940-101-11	KNOB, SELECTION (E710)	
104	3-966-255-01	KNOB (3P), SLIDE (EXCEPT E710)	
* 105	A-6782-837-A	DM-49 BOARD, COMPLETE (E810)	
* 105	A-6782-849-A	DM-49 BOARD, COMPLETE (E510)	
* 105	A-6782-862-A	DM-49 BOARD, COMPLETE (E710)	
* 106	A-6782-836-A	HI-25 BOARD, COMPLETE (E810EE/NP/UX/VC)	
* 106	A-6782-841-A	HI-25 BOARD, COMPLETE (E810B/BZ)	
* 106	A-6782-848-A	HI-25 BOARD, COMPLETE (E510)	
* 106	A-6782-858-A	HI-25 BOARD, COMPLETE (E710EX/NC/NP/UX/VC/VP)	
* 106	A-6782-861-A	HI-25 BOARD, COMPLETE (E710B)	
107	1-776-225-11	CABLE, FLAT (FMH-9) 15P	
* 108	A-6794-137-A	DC-70 BOARD, COMPLETE	
109	3-966-237-01	HOLDER (ST), MA	
* 110	A-6782-835-A	RP-199 BOARD, COMPLETE (E810)	
* 110	A-6782-847-A	RP-199 BOARD, COMPLETE (E510)	
* 110	A-6782-860-A	RP-199 BOARD, COMPLETE (E710)	
* 111	A-6782-834-A	MA-253 BOARD, COMPLETE (E810VC)	
* 111	A-6782-840-A	MA-253 BOARD, COMPLETE (E810BZ)	
* 111	A-6782-842-A	MA-253 BOARD, COMPLETE (E810B)	
* 111	A-6782-843-A	MA-253 BOARD, COMPLETE (E810NP)	
* 111	A-6782-844-A	MA-253 BOARD, COMPLETE (E810EE)	
* 111	A-6782-845-A	MA-253 BOARD, COMPLETE (E810UX)	
* 111	A-6782-846-A	MA-253 BOARD, COMPLETE (E510VC1/VC2)	
* 111	A-6782-851-A	MA-253 BOARD, COMPLETE (E510EE)	
* 111	A-6782-854-A	MA-253 BOARD, COMPLETE (E710UX)	
* 111	A-6782-856-A	MA-253 BOARD, COMPLETE (E710VP)	
* 111	A-6782-857-A	MA-253 BOARD, COMPLETE (E710VC)	
* 111	A-6782-859-A	MA-253 BOARD, COMPLETE (E710B)	
* 111	A-6782-865-A	MA-253 BOARD, COMPLETE (E710NP)	
* 111	A-6782-866-A	MA-253 BOARD, COMPLETE (E710NC)	
* 111	A-6782-867-A	MA-253 BOARD, COMPLETE (E710EX)	
* 112	A-6782-850-A	PS-357 BOARD, COMPLETE (E510EE/VC1/VC2)	
* 112	A-6782-864-A	PS-357 BOARD, COMPLETE (E710, E810)	
113	3-966-229-01	INSULATOR (ST) (EXCEPT E510)	
113	3-966-229-11	INSULATOR (ST) (E510)	
S410	1-572-662-12	SWITCH, ROTARY (DUAL MODE SHUTTLE)	

5-1-4. MECHANISM CHASSIS ASSEMBLY (1)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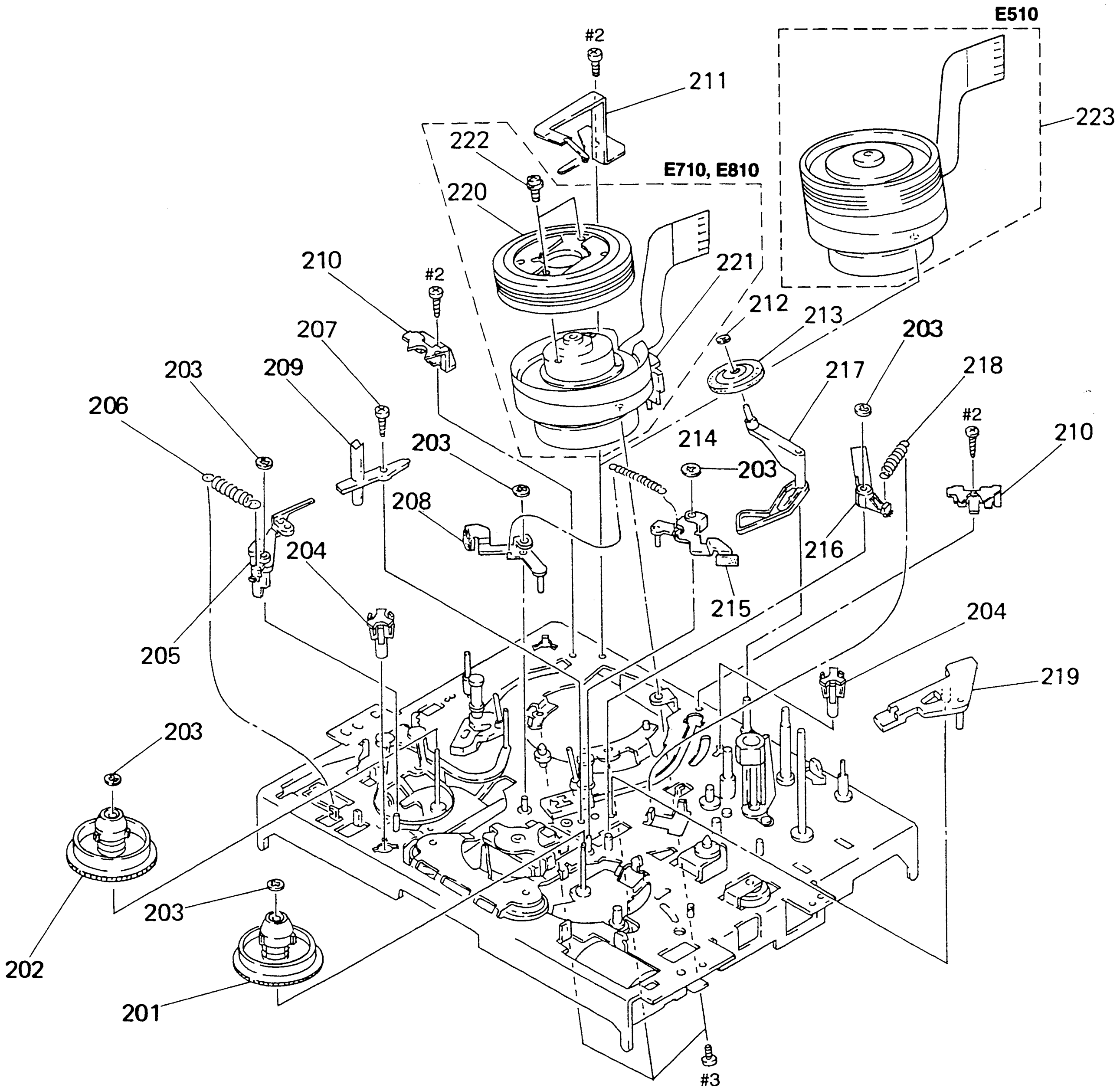
Ref. No.	Part No.	Description	Remark
151	X-3945-348-1	FEH ASSY	
152	1-500-144-11	HEAD, FE	
153	X-3944-460-1	ROLLER ASSY, TG2	
154	3-958-421-01	HOLDER, TG8	
155	X-3944-797-1	TG8 ASSY	
156	3-962-298-01	BRACKET, TG7 TAPE	
157	A-6751-496-C	FL BLOCK ASSY	
158	3-958-467-01	SPRING, TENSION COIL	
159	3-958-195-01	SPRING, TORSION	
160	3-960-215-01	PLATE, LIGHT GUIDE, END SENSOR	
161	3-960-216-01	PLATE, LIGHT GUIDE, TOP SENSOR	
162	A-6736-103-A	ACE BLOCK ASSY	
163	3-960-439-02	SPRING (ACE), COMPRESSION	
164	1-506-485-11	PIN, CONNECTOR 6P	
165	3-958-491-01	BASE, ACE	
166	3-942-867-01	NUT, AC HEIGHT ADJUSTMENT	
167	A-6746-072-A	PRESS BLOCK ASSY, PINCH	
168	3-958-455-01	SPRING (PINCH), TENSION	
169	3-958-487-01	SPRING, (AEC) TORSION COIL	
170	3-958-152-01	GEAR, TG8	
171	3-958-501-01	SCREW, ACE ADJUSTMENT	
172	3-958-151-01	GEAR, ELEVATOR	
173	3-958-454-01	OPNER, LID	
174	3-958-153-01	GEAR, PRESS	
175	3-958-462-01	SPRING (RVS BRAKE), TENSION	
176	X-3943-885-1	ARM ASSY, RVS BRAKE	
177	X-3943-882-1	BRAKE (T) ASSY, SOFT	
178	3-958-505-01	SPRING (SOFT BRAKE T), TENSION	

5-1-5. MECHANISM CHASSIS ASSEMBLY (2)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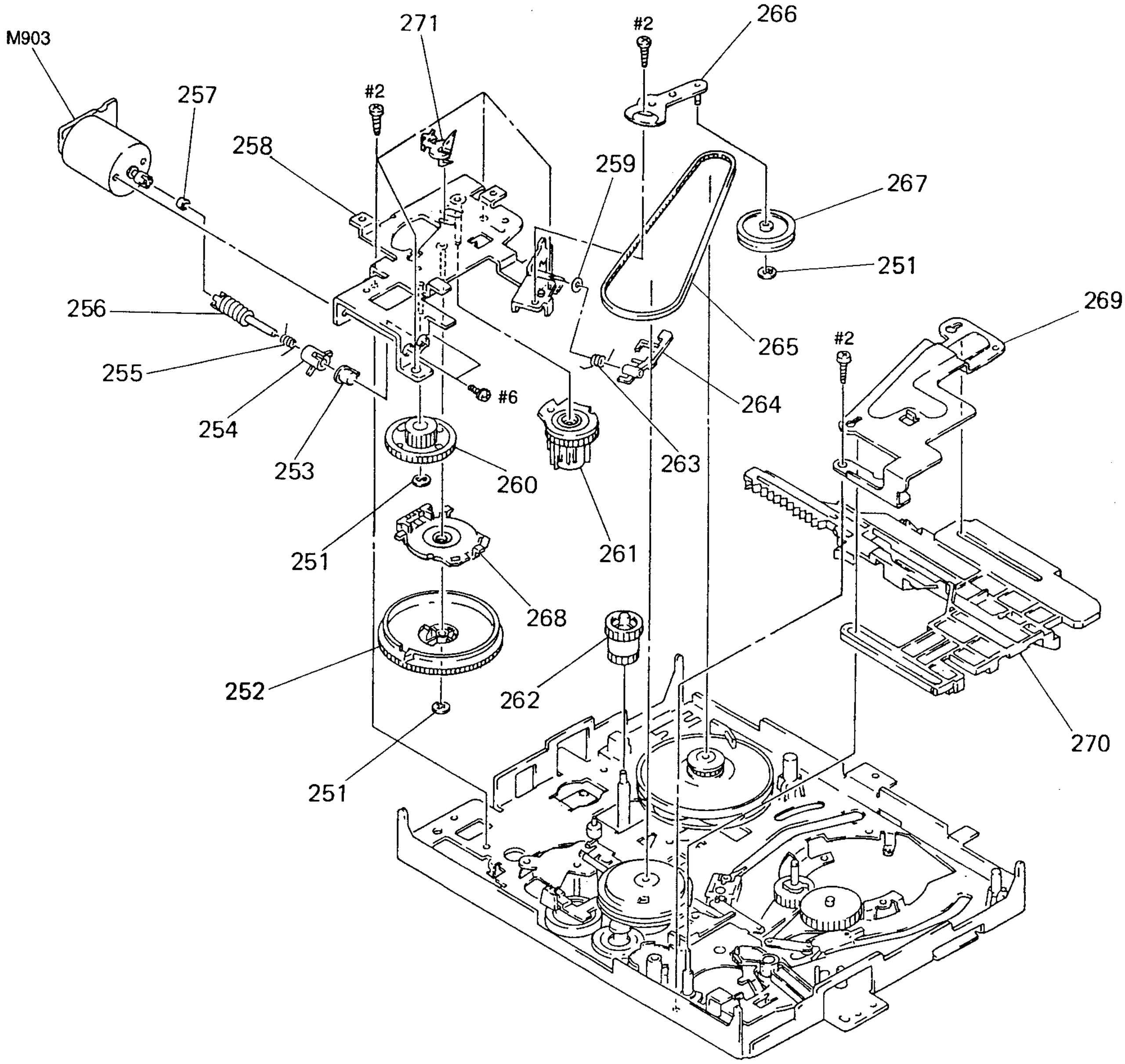
Ref. No.	Part No.	Description	Remark
201	X-3943-903-1	TABLE, REEL (T) ASSY	
202	X-3943-902-1	TABLE, REEL (S) ASSY	
203	3-669-595-00	WASHER (2), STOPPER	
204	3-958-390-01	SHAFT, PC BOARD	
205	3-958-450-01	BRAKE (S), SOFT	
206	3-958-443-01	SPRING, STRETCH COIL SPRING	
207	3-961-441-01	SCREW (3X8)	
208	X-3945-650-1	BRAKE (S) ASSY, MAIN	
209	3-958-391-01	PLATE, LIGHT GUIDE, LED	
210	3-958-389-01	CATCHER	
211	X-3943-899-5	GROUND ASSY, SHAFT	
212	3-321-393-01	WASHER, STOPPER	
213	X-3944-363-1	ROLLER ASSY, HC	
214	3-958-517-01	SPRING, TENSIONCOIL	
215	X-3945-651-1	ARM (T) ASSY, MAIN BRAKE	
216	3-960-139-01	ARM, NEUTRALITY	
217	X-3943-896-1	ARM ASSY, HC	
218	3-958-535-01	SPRING, TENSION	
219	3-960-138-01	ARM, PENDULUM COMPULSION	
220	8-848-622-02	DRUM ASSY, ROTARY UPPER (DZR-66-R)	(E710, E810)
221	8-848-666-11	DRUM ASSY, LOWER (DZL-51/J-RP)	(E710, E810)
222	2-643-205-01	SCREW, +PW 3X8	
223	8-848-682-11	DRUM ASSY (DZH-74B/Q-RP) (E510)	

5-1-6. MECHANISM CHASSIS ASSEMBLY (3)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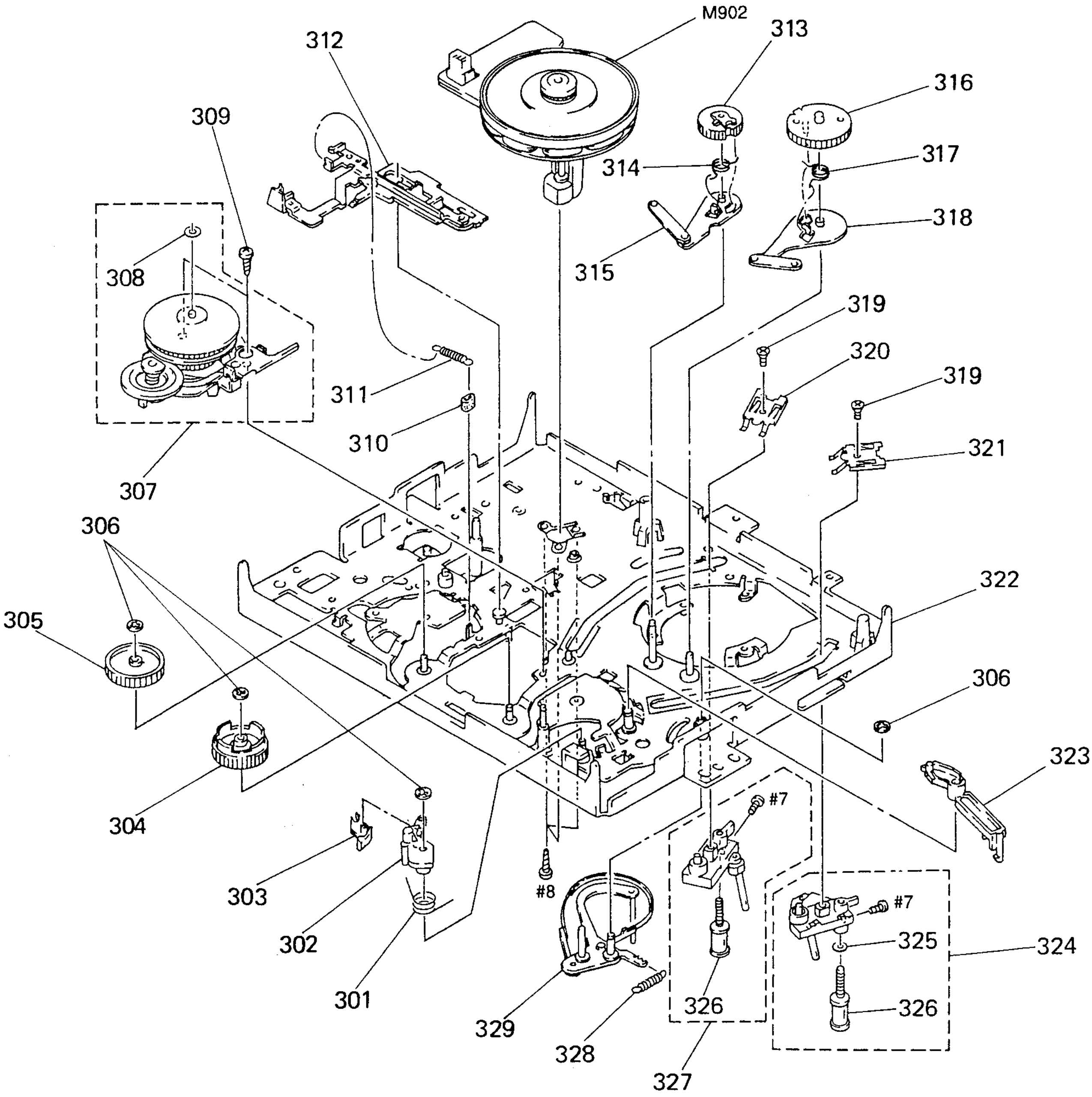
Ref. No.	Part No.	Description	Remark
251	3-669-595-00	WASHER (2), STOPPER	
252	3-958-161-04	GEAR, CAM	
253	3-958-155-01	BEARING, CAM MOTOR	
254	3-958-160-01	PROPELLOR	
255	3-958-460-01	SPRING, ONE-WAY	
256	3-958-159-01	WORM	
257	3-959-840-11	RUBBER, JOINT	
* 258	X-3943-884-1	CHASSIS ASSY, CAM MOTOR	
259	3-701-439-21	WASHER	
260	3-958-157-01	WHEEL, WORM	
261	3-958-156-02	GEAR, FL DRIVING	
262	3-958-162-01	GEAR, UPPER/LOWER COMMUNICATION	
263	3-958-445-01	SPRING, TORSIONCOIL (CAP BRAKE)	
264	X-3943-888-1	BRAKE ASSY, CAP	
265	3-958-361-01	BELT, TIMING	
266	X-3943-889-1	ARM ASSY, TENSION VEHICLE	
267	3-958-448-01	WHEEL, TENSION	
268	1-762-076-11	SWITCH, ROTARY	
* 269	3-959-763-01	RETAINER	
270	3-958-163-04	SLIDER, MAIN	
271	3-965-977-01	RETAINER, CAM GEAR	
M903	X-3943-883-1	MOTOR ASSY, CAM	

5-1-7. MECHANISM CHASSIS ASSEMBLY (4)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Ref. No.	Part No.	Description	Remark
301	3-958-534-01	SPRING, TORSION	
302	3-958-532-01	ARM, S WINDING	
303	3-958-533-01	CLAW, S WINDING	
304	3-962-959-01	GEAR (S-K), IDLER	
305	3-962-960-01	GEAR (T-K), IDLER	
306	3-669-595-00	WASHER (2), STOPPER	
307	A-6739-102-A	RKB BLOCK ASSY	
308	3-966-092-01	RING, RETAINING, SLIT WASHER	
309	3-961-441-01	SCREW (3X8)	
310	3-959-840-11	RUBBER, JOINT	
311	3-958-529-01	SPRING (MOMENT), TENSION	
312	X-3943-897-1	LEVER ASSY, TRIGGER	
313	3-958-485-02	GEAR (T), LOADING	
314	3-960-449-01	SPRING (T), TORSION COIL	
315	X-3943-891-1	LEVER (T) ASSY, LOADING	
316	3-958-476-01	GEAR (S), LOADING	
317	3-960-448-01	SPRING (S), TORSION COIL	
318	X-3943-890-1	LEVER (S) ASSY, LOADING	
319	3-960-720-01	SCREW	
320	3-960-688-01	SPRING, LEAF (T), LOADING	
321	3-960-687-01	SPRING, LEAF (S), LOADING	
322	X-3945-485-1	CHASSIS ASSY, MECHANICAL	
323	3-958-504-01	ARM, FIXED RELEASE	
324	A-6750-316-A	SHUTTLE (S) BLOCK ASSY	
325	3-962-874-01	O-RING	
326	X-3944-378-1	ROLLER ASSY, GUIDE	
327	A-6750-314-A	T BLOCK ASSY, SHUTTLE	
328	3-958-492-01	SPRING (TG1), TENSION COIL	
329	X-3943-886-1	TG1 ASSY	
M902	1-698-409-11	MOTOR, DC SCV-0801A/Z-NP (CAPSTAN)	

5-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark
	A-6794-137-A	DC-70 BOARD, COMPLETE	
		*********************	
			(Ref. No. 1,000 Series)
		< CONNECTOR >	
* CN001	1-766-714-11	CONNECTOR, BOARD TO BOAR 5P	
* CN002	1-766-713-11	CONNECTOR, BOARD TO BOAR 5P	
*	A-6782-849-A	DM-49 BOARD, COMPLETE (E510)	
*	A-6782-862-A	DM-49 BOARD, COMPLETE (E710)	
*	A-6782-837-A	DM-49 BOARD, COMPLETE (E810)	
		*********************	
			(Ref. No. 1,000 Series)
		< CAPACITOR >	
C401	1-163-038-91	CERAMIC CHIP 0.1uF	25V (E510, E810)
C402	1-126-933-11	ELECT 100uF	20% 10V (E510, E810)
C405	1-163-181-00	CERAMIC CHIP 100PF	5% 50V (E510, E810)
		< CONNECTOR >	
CN401	1-568-665-11	CONNECTOR, BOARD TO BOARD 11P	
CN402	1-580-850-11	CONNECTOR (DMS) 8P	
CN403	1-695-371-31	CONNECTOR, FFC/FPC 10P (E810)	
		< LED >	
D401	8-719-045-63	LED SLR-342YC-A-47(REC STBY)	(E510, E810)
D402	8-719-045-63	LED SLR-342YC-A-47(REC STBY)	(E510, E810)
D403	8-719-051-23	LED SLR-54VC3F (REC)	(E510, E810)
		< IC >	
IC401	8-759-366-45	IC NJU3713G(TE2)	(E510, E810)
		< RESISTOR >	
R401	1-216-033-00	METAL CHIP 220 5%	1/10W (E810)
R402	1-216-033-00	METAL CHIP 220 5%	1/10W (E810)
R403	1-216-033-00	METAL CHIP 220 5%	1/10W (E810)
R404	1-216-033-00	METAL CHIP 220 5%	1/10W (E810)
R405	1-216-033-00	METAL CHIP 220 5%	1/10W (E810)
R406	1-216-033-00	METAL CHIP 220 5%	1/10W (E810)
R407	1-216-033-00	METAL CHIP 220 5%	1/10W (E810)
R408	1-216-033-00	METAL CHIP 220 5%	1/10W (E810)
R409	1-216-049-91	METAL GLAZE 1K 5%	1/10W (E510, E810)
R410	1-216-049-91	METAL GLAZE 1K 5%	1/10W (E510, E810)
R411	1-216-198-91	METAL GLAZE 1K 5%	1/8W (E510, E810)
R412	1-216-049-91	METAL GLAZE 1K 5%	1/10W (E510, E810)
R413	1-247-815-91	CARBON 220 5%	1/4W (E810)
R414	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R415	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R416	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R417	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R418	1-249-401-11	CARBON 47 5%	1/4W (E510, E810)
R419	1-247-815-91	CARBON 220 5%	1/4W (E510, E810)
R420	1-216-222-00	METAL GLAZE 10K 5%	1/8W
		< SWITCH >	
S401	1-571-977-11	SWITCH, TACTIL (● REC) (E710)	
S402	1-571-977-11	SWITCH, TACTIL (● REC) (E510, E810)	
S403	1-571-977-11	SWITCH, TACTIL (❚❚ PAUSE)	
S404	1-571-977-11	SWITCH, TACTIL (⏏ EJECT) (E510, E810)	
S405	1-571-977-11	SWITCH, TACTIL (⏏ EJECT) (E710)	
S410	1-572-662-12	SWITCH, ROTARY (DUAL MODE SHUTTLE)	

HI-25

Ref. No.	Part No.	Description	Remark
*	A-6782-848-A	HI-25 BOARD, COMPLETE	(E510)
*	A-6782-858-A	HI-25 BOARD, COMPLETE	(E710EX/NC/UX/VC/VP)
*	A-6782-861-A	HI-25 BOARD, COMPLETE	(E710B)
*	A-6782-836-A	HI-25 BOARD, COMPLETE	(E810EE/NP/UX/VC)
*	A-6782-841-A	HI-25 BOARD, COMPLETE	(E810B/BZ)

****

(Ref.No. 1,000 Series)

Ref. No.	Part No.	Description	Remark
	3-966-234-01	HOLDER (A), FL	(E710B/EX/NC/UX/VC/VP)
	3-966-257-01	HOLDER (B), FL	(E510, E810)

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C302	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	(E810)
C305	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	(E810, E510)
C307	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C311	1-163-035-00	CERAMIC CHIP 0.047uF 50V	(E710)

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN301	1-774-619-11	CONNECTOR, FFC/FPC 15P	
CN302	1-506-483-21	PIN, CONNECTOR 4P	(E510)
CN302	1-506-484-11	PIN, CONNECTOR 5P	(E810)
CN303	1-774-619-11	CONNECTOR, FFC/FPC 15P	
CN304	1-774-619-11	CONNECTOR, FFC/FPC 15P	
CN305	1-568-671-11	CONNECTOR, BOARD TO BOARD 11P	
CN306	1-691-036-21	PIN, CONNECTOR (PC BOARD) 4P	(E810)

< DIODE >

Ref. No.	Part No.	Description	Remark
D301	8-719-108-12	DIODE RD9.1EW	(E510, E810)
D302	8-719-010-34	DIODE UZ-4.7BSC	
D303	8-719-108-12	DIODE RD9.1EW	(E810)
D304	8-719-108-12	DIODE RD9.1EW	(E510, E810)
D306	8-719-110-08	DIODE RD8.2ES-B2	

< FILTER >

Ref. No.	Part No.	Description	Remark
FL301	1-517-476-11	TUBE, FLUORESCENT INDICATOR	(E510, E710EX /NC/UX/VC/VP, E810EE/NP/UX/VC)
FL301	1-517-479-11	TUBE, FLUORESCENT INDICATOR	(E710B, E810B/BZ)

< IC >

Ref. No.	Part No.	Description	Remark
IC301	1-466-833-11	IC RAY-CATCHER BLOCK, REMOCON	(E710)

< JUMPER RESISTOR >

Ref. No.	Part No.	Description	Remark
JR002	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W	
JR003	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W	
JR004	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	(E510, E810)
JR005	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W	
JR006	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W	
JR007	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
JR008	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
JR307	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
JR312	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	

< JACK >

Ref. No.	Part No.	Description	Remark
* PJ301	1-766-862-11	JACK, PIN (2P) (LINE-2 IN)	(E510)
PJ301	1-766-861-11	JACK, PIN (3P) (LINE-2 IN)	(E810)

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R301	1-216-022-00	METAL CHIP 75 5% 1/10W	(E510, E810)
R302	1-216-041-00	METAL CHIP 470 5% 1/10W	(E810)
R303	1-216-041-00	METAL CHIP 470 5% 1/10W	(E510, E810)
R304	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R308	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R309	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R310	1-249-429-11	CARBON 10K 5% 1/4W	
R311	1-249-429-11	CARBON 10K 5% 1/4W	
R312	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R313	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	(E710B/EX/NC/UX/VC/VP)
R315	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	(E710B/EX/NC/UX/VC/VP)
R321	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	(E710B/EX/NC/UX/VC/VP)
R324	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R327	1-216-089-91	METAL GLAZE 47K 5% 1/10W	(E710)
R329	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	(E510, E810)
R330	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	(E510, E810)
R331	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	(E710B/EX/NC/UX/VC/VP)

< SWITCH >

Ref. No.	Part No.	Description	Remark
S301	1-572-908-11	SWITCH, SLIDE (STANDBY DISPLAY)	
S302	1-572-908-11	SWITCH, SLIDE (EDIT)	
S304	1-571-977-11	SWITCH, TACTIL (EASY SET UP)	(E710)
S304	1-571-977-11	SWITCH, TACTIL (RF CHANNEL)	(E510, E810)
S306	1-571-977-11	SWITCH, TACTIL (RF CHANNEL)	(E710)

	Ref. No.	Part No.	Description	Remark
	S311	1-571-977-11	SWITCH, TACTIL (PROGRAM -) (E710)	
	S312	1-571-977-11	SWITCH, TACTIL (EASY SET UP) (E510, E710)	
	S312	1-571-977-11	SWITCH, TACTIL (PROGRAM +) (E710)	

	Ref. No.	Part No.	Description	Remark
*		A-6782-839-A	LE-13 BOARD, COMPLETE (E810)	
			*********************	
			(Ref. No. 1,000 Series)	
			< CONNECTOR >	
	CN601	1-691-069-11	HOUSING, CONNECTOR 10P (E810)	
			< LED >	
	D601	8-719-056-07	LED SLR-342MC3F (E810)	
	D602	8-719-056-07	LED SLR-342MC3F (E810)	
	D603	8-719-056-07	LED SLR-342MC3F (E810)	
	D604	8-719-056-07	LED SLR-342MC3F (E810)	
	D605	8-719-056-06	LED SLR-342DC3F (E810)	
	D606	8-719-056-07	LED SLR-342MC3F (E810)	
	D607	8-719-056-07	LED SLR-342MC3F (E810)	
	D608	8-719-056-07	LED SLR-342MC3F (E810)	
	D609	8-719-056-07	LED SLR-342MC3F (E810)	

	Ref. No.	Part No.	Description	Remark
*		A-6782-851-A	MA-253 BOARD, COMPLETE (E510EE)	
*		A-6782-846-A	MA-253 BOARD, COMPLETE (E510VC1/VC2)	
*		A-6782-859-A	MA-253 BOARD, COMPLETE (E710B)	
*		A-6782-867-A	MA-253 BOARD, COMPLETE (E710EX)	
*		A-6782-866-A	MA-253 BOARD, COMPLETE (E710NC)	
*		A-6782-865-A	MA-253 BOARD, COMPLETE (E710NP)	
*		A-6782-854-A	MA-253 BOARD, COMPLETE (E710UX)	
*		A-6782-857-A	MA-253 BOARD, COMPLETE (E710VC)	
*		A-6782-856-A	MA-253 BOARD, COMPLETE (E710VP)	
*		A-6782-842-A	MA-253 BOARD, COMPLETE (E810B)	
*		A-6782-840-A	MA-253 BOARD, COMPLETE (E810BZ)	
*		A-6782-844-A	MA-253 BOARD, COMPLETE (E810EE)	
*		A-6782-843-A	MA-253 BOARD, COMPLETE (E810NP)	
*		A-6782-845-A	MA-253 BOARD, COMPLETE (E810UX)	
*		A-6782-834-A	MA-253 BOARD, COMPLETE (E810VC)	
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			(Ref. No. 2,000 Series)	
*		3-960-273-01	SPACER, TOP END	
*		3-960-274-01	SPACER, LED	
			< BUZZER >	
	BZ151	1-529-104-11	BUZZER, PIEZOELECTRIC	

Ref. No.	Part No.	Description			Remark
		< CAPACITOR >			
C101	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C102	1-126-967-11	ELECT	47uF	20%	16V
C103	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C104	1-124-234-00	ELECT	22uF	20%	16V
			(E510EE/VC1/VC2, E710, E810)		
C105	1-124-584-00	ELECT	100uF	20%	10V
C106	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C107	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C108	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C109	1-124-257-00	ELECT	2.2uF	20%	50V
C111	1-124-257-00	ELECT	2.2uF	20%	50V
C114	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C131	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C132	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C133	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C135	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C136	1-126-157-11	ELECT	10uF	20%	16V
C139	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C151	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C152	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C153	1-163-346-91	CERAMIC CHIP	1uF		50V
C154	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C155	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C156	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C157	1-164-346-91	CERAMIC CHIP	1uF		50V
C158	1-128-057-11	ELECT	330uF	20%	6.3V
C159	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C160	1-125-705-11	CAPACITOR	0.22F	0	5.5V
C161	1-128-057-11	ELECT	330uF	20%	6.3V
C162	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C163	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C164	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V
C165	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C166	1-126-916-11	ELECT	1000uF	20%	6.3V
C201	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C202	1-163-346-91	CERAMIC CHIP	1uF		50V
C203	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C204	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C205	1-163-081-00	CERAMIC CHIP	0.22uF		25V
C206	1-163-346-91	CERAMIC CHIP	1uF		50V
C207	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C208	1-124-584-00	ELECT	100uF	20%	10V
C209	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C252	1-162-638-11	CERAMIC CHIP	1uF		16V

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Ref. No.	Part No.	Description			Remark
C253	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C254	1-124-589-11	ELECT	47uF	20%	16V
C255	1-130-489-00	MYLAR	0.033uF	5%	50V
C256	1-137-441-11	FILM	0.027uF	5%	50V
C261	1-126-176-11	ELECT	220uF	20%	10V
C262	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C264	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C266	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C267	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C273	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C275	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C291	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C292	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C294	1-124-455-00	ELECT	100uF	20%	16V
C295	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C296	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C301	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C302	1-163-258-00	CERAMIC CHIP	220PF	5%	50V
C303	1-163-243-00	CERAMIC CHIP	47pF	5%	50V
C304	1-124-589-11	ELECT	47uF	20%	16V
C305	1-124-589-11	ELECT	47uF	20%	16V
C306	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C307	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C308	1-126-096-11	ELECT	10uF	20%	35V
C309	1-124-589-11	ELECT	47uF	20%	16V
C312	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C313	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C322	1-164-699-11	CERAMIC CHIP	0.0033uF	5%	50V
					(E710B, E810B/BZ)
C323	1-124-967-11	ELECT	10uF	20%	10V
					(E710B, E810B/BZ)
C352	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C353	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C354	1-124-589-11	ELECT	47uF	20%	16V
C356	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C357	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C358	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C359	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C360	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C401	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C402	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C404	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
					(E510EE, E710B, E810B/BZ/EE)
C405	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
					(E510EE, E710B, E810B/BZ/EE)
C406	1-126-176-11	ELECT	220uF	20%	10V
C407	1-163-031-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description			Remark
C408	1-164-505-11	CERAMIC CHIP	2.2uF		16V
					(E710, E810)
C408	1-163-031-11	CERAMIC CHIP	0.01uF		50V
					(E510)
C409	1-126-176-11	ELECT	220uF	20%	10V
C410	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C411	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C412	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C413	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C414	1-124-584-00	ELECT	100uF	20%	10V
C416	1-124-257-00	ELECT	2.2uF	20%	50V
C417	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C418	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C419	1-124-589-11	ELECT	47uF	20%	16V
C420	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C421	1-162-306-11	CERAMIC	0.01uF	20%	16V
C422	1-126-160-11	ELECT	1uF	20%	50V
C423	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C424	1-124-589-11	ELECT	47uF	20%	16V
C425	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C427	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C441	1-163-031-11	CERAMIC CHIP	0.01uF		50V
					(E510EE, E710B, E810B/BZ/EE)
C442	1-163-031-11	CERAMIC CHIP	0.01uF		50V
					(E510EE, E710B, E810B/BZ/EE)
C443	1-126-967-11	ELECT	47uF	20%	16V
					(E510EE, E710B, E810B/BZ/EE)
C451	1-126-967-11	ELECT	47uF	20%	16V
C452	1-126-967-11	ELECT	47uF	20%	16V
					(E710B, E810B/BZ)
C455	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
					(E710B, E810B/BZ)
C461	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C462	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C463	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C464	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C465	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C466	1-163-181-00	CERAMIC CHIP	100PF	5%	50V
C471	1-163-038-91	CERAMIC CHIP	0.1uF		25V
					(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
C472	1-126-967-11	ELECT	47uF	20%	16V
					(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
C473	1-124-903-11	ELECT	1uF	20%	50V
					(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/UX/VC)
C474	1-124-903-11	ELECT	1uF	20%	50V
					(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/UX/VC)

Ref. No.	Part No.	Description				Remark
C475	1-124-903-11	ELECT	1uF	20%	50V	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
C476	1-124-903-11	ELECT	1uF	20%	50V	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
C484	1-163-038-91	CERAMIC CHIP	0. 1uF		25V	(E810UX)
C485	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	(E810UX)
C501	1-163-011-11	CERAMIC CHIP	0. 0015uF	10%	50V	(E710, E810)
C502	1-163-011-11	CERAMIC CHIP	0. 0015uF	10%	50V	(E710, E810)
C503	1-124-589-11	ELECT	47uF	20%	16V	(E710, E810)
C510	1-104-760-11	CERAMIC CHIP	0. 047uF	10%	50V	(E710, E810)
C520	1-126-162-11	ELECT	3. 3uF	20%	50V	(E710, E810)
C521	1-126-096-11	ELECT	10uF	20%	35V	(E710, E810)
C522	1-137-372-11	FILM	0. 022uF	5%	50V	(E710, E810)
C523	1-126-163-11	ELECT	4. 7uF	20%	50V	(E710, E810)
C524	1-124-589-11	ELECT	47uF	20%	16V	(E710, E810)
C525	1-137-370-11	FILM	0. 01uF	5%	50V	(E710, E810)
C530	1-126-162-11	ELECT	3. 3uF	20%	50V	(E710, E810)
C531	1-126-096-11	ELECT	10uF	20%	35V	(E710, E810)
C532	1-137-372-11	FILM	0. 022uF	5%	50V	(E710, E810)
C533	1-126-963-11	ELECT	4. 7uF	20%	50V	(E710, E810)
C534	1-124-589-11	ELECT	47uF	20%	16V	(E710, E810)
C535	1-137-370-11	FILM	0. 01uF	5%	50V	(E710, E810)
C541	1-137-372-11	FILM	0. 022uF	5%	50V	(E710, E810)
C542	1-124-584-00	ELECT	100uF	20%	10V	(E710, E810)
C551	1-124-234-00	ELECT	22uF	20%	16V	(E710, E810)
C552	1-124-234-00	ELECT	22uF	20%	16V	(E710, E810)
C561	1-126-160-11	ELECT	1uF	20%	50V	
C562	1-137-370-11	FILM	0. 01uF	5%	50V	
C563	1-126-163-11	ELECT	4. 7uF	20%	50V	
C565	1-163-143-00	CERAMIC CHIP	0. 0012uF	5%	50V	
C566	1-163-014-00	CERAMIC CHIP	0. 0027uF	5%	50V	
C571	1-163-141-00	CERAMIC CHIP	0. 001uF	5%	50V	(E710, E810)
C572	1-163-141-00	CERAMIC CHIP	0. 001uF	5%	50V	(E710, E810)
C591	1-124-584-00	ELECT	100uF	20%	10V	(E710, E810)
C592	1-115-438-00	ELECT	100uF	20%	10V	(E710, E810)
C593	1-124-589-11	ELECT	47uF	20%	16V	(E710, E810)
C610	1-163-038-91	CERAMIC CHIP	0. 1uF		25V	
C660	1-163-038-91	CERAMIC CHIP	0. 1uF		25V	
C681	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	
C682	1-126-935-11	ELECT	470uF	20%	16V	
C683	1-126-935-11	ELECT	470uF	20%	6. 3V	
C684	1-126-967-11	ELECT	47uF	20%	16V	
C701	1-126-967-11	ELECT	47uF	20%	16V	
C702	1-126-964-11	ELECT	10uF	20%	50V	
C703	1-126-964-11	ELECT	10uF	20%	50V	(E710, E810)
C704	1-163-009-11	CERAMIC CHIP	0. 001uF	10%	50V	
C705	1-126-964-11	ELECT	10uF	20%	50V	
C706	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	
C707	1-126-933-11	ELECT	100uF	20%	16V	
C708	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	
C713	1-126-967-11	ELECT	47uF	20%	16V	
C714	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	
C716	1-126-964-11	ELECT	10uF	20%	50V	(E710, E810)
C717	1-126-964-11	ELECT	10uF	20%	50V	
C718	1-128-551-11	ELECT	22uF	20%	25V	
C721	1-164-004-11	CERAMIC CHIP	0. 1uF	10%	25V	
C727	1-126-933-11	ELECT	100uF	20%	10V	
C728	1-126-933-11	ELECT	100uF	20%	10V	
C729	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	
C730	1-162-302-11	CERAMIC	0. 0022uF	30%	16V	(E510)
C761	1-124-234-00	ELECT	22uF	20%	16V	(E510VC1/VC2)
C766	1-124-234-00	ELECT	22uF	20%	16V	(E510VC1/VC2)

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Ref. No.	Part No.	Description			Remark
C771	1-107-682-11	CERAMIC CHIP	1uF	10%	16V (E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
C772	1-107-682-11	CERAMIC CHIP	1uF	10%	16V (E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
C773	1-124-234-00	ELECT	22uF	20%	16V (E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
C774	1-124-234-00	ELECT	22uF	20%	16V (E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
C775	1-107-682-11	CERAMIC CHIP	1uF	10%	16V (E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
C776	1-124-234-00	ELECT	22uF	20%	16V (E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
C778	1-128-499-11	ELECT	220uF	20%	16V (E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
C779	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V (E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
C780	1-128-499-11	ELECT	220uF	20%	16V (E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
C781	1-124-234-00	ELECT	22uF	20%	16V (E510VC1/VC2)
C786	1-124-234-00	ELECT	22uF	20%	16V (E510VC1/VC2)
C791	1-107-682-11	CERAMIC CHIP	1uF	10%	16V (E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
C792	1-107-682-11	CERAMIC CHIP	1uF	10%	16V (E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
C793	1-124-234-00	ELECT	22uF	20%	16V (E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
C794	1-124-234-00	ELECT	22uF	20%	16V (E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
C795	1-107-682-11	CERAMIC CHIP	1uF	10%	16V (E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
C796	1-124-234-00	ELECT	22uF	20%	16V (E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
C851	1-126-157-11	ELECT	10uF	20%	16V (E510)
C852	1-124-234-00	ELECT	22uF	20%	16V (E510)
C853	1-124-234-00	ELECT	22uF	20%	16V (E510)
C854	1-124-252-00	ELECT	0.33uF	20%	50V (E510)
C855	1-126-157-11	ELECT	10uF	20%	16V (E510)
C856	1-126-160-11	ELECT	1uF	20%	50V (E510)
C857	1-126-160-11	ELECT	1uF	20%	50V (E510)
C858	1-126-160-11	ELECT	1uF	20%	50V (E510)
C864	1-126-162-11	ELECT	3.3uF	20%	50V (E510)
C871	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V (E510)
C872	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V (E510)
C873	1-124-257-00	ELECT	2.2uF	20%	50V
C881	1-137-612-11	FILM	0.0068uF	5%	100V (E810)
C881	1-104-696-11	FILM	0.015uF	5%	100V (E510, E710)
C882	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C883	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C884	1-126-933-11	ELECT	100uF	20%	16V
C885	1-137-431-11	FILM	560PF	5%	50V
C891	1-104-697-11	FILM	0.047uF	5%	100V (E810)
C892	1-164-232-11	CERAMIC CHIP	0.01uF		50V (E810)
C893	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V (E810)
C894	1-124-455-00	ELECT	100uF	20%	16V (E810)
C901	1-163-031-11	CERAMIC CHIP	0.01uF		50V

< JACK >

Ref. No.	Part No.	Description	Remark
CJ601	1-695-935-11	CONNECTOR (SQUARE TYPE) 21P)	(EURO AV)
CJ621	1-565-319-71	JACK, PIN 2P (AUDIO OUT)	(E710, E810)
CJ651	1-695-935-11	CONNECTOR (SQUARE TYPE) 21P	(PAY-TV DECODER) (E510VC1/VC2, E710, E810B/BZ/NP/UX/VC)

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN101	1-506-468-11	PIN, CONNECTOR 3P	
* CN271	1-766-538-11	CONNECTOR, BOARD TO BOARD 8P	
* CN275	1-766-717-11	CONNECTOR, BOARD TO BOARD 5P	
* CN281	1-766-537-11	CONNECTOR (HMD) 5P	
* CN291	1-766-716-11	CONNECTOR, BOARD TO BOARD 3P	

Ref. No.	Part No.	Description	Remark
CN301	1-766-718-11	CONNECTOR, BOARD TO BOARD 17P	
* CN501	1-766-600-11	CONNECTOR, BOARD TO BOARD 7P	
* CN851	1-560-892-00	PIN, CONNECTOR 4P	
* CN881	1-560-891-00	PIN, CONNECTOR 3P	
CN901	1-774-461-11	CONNECTOR, FFC/FPC 15P	
CN902	1-774-461-11	CONNECTOR, FFC/FPC 15P	
CN903	1-774-461-11	CONNECTOR, FFC/FPC 15P	
CN904	1-766-980-71	CONNECTOR, FFC/FPC 7P	
CN905	1-506-469-11	PIN, CONNECTOR 4P	(E510)
CN905	1-506-470-11	PIN, CONNECTOR 5P	(E810)
CN906	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P	
CN907	1-506-469-11	PIN, CONNECTOR 4P	

< DIODE >

Ref. No.	Part No.	Description	Remark
D151	8-719-200-82	DIODE 11ES2	
D152	8-719-200-82	DIODE 11ES2	
D201	8-719-200-82	DIODE 11ES2	
D202	8-719-801-48	DIODE 1SS193	
D203	8-719-801-78	DIODE 1SS184	(E510)
D204	8-719-801-48	DIODE 1SS193	(E710B, E810B/BZ)
D251	8-719-801-48	DIODE 1SS193	
D261	8-719-048-26	LED GL528V1	
D265	8-719-921-54	DIODE MTZJ-6.2B	
D267	8-719-921-54	DIODE MTZJ-6.2B	
D291	8-719-977-24	DIODE DTZ9.1B	
D301	8-719-911-19	DIODE 1SS119-25	
D401	8-719-801-78	DIODE 1SS184	(E510EE, E710B, E810B/BZ/EE)
D402	8-719-801-48	DIODE 1SS193	
D403	8-719-801-48	DIODE 1SS193	
D471	8-719-200-82	DIODE 11ES2	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/UX/VC)
D591	8-719-404-46	DIODE MA110	(E710, E810)
D601	8-719-109-97	DIODE RD6.8ES-B2	
D602	8-719-109-97	DIODE RD6.8ES-B2	
D603	8-719-921-86	DIODE MTZJ-13	
D604	8-719-109-97	DIODE RD6.8ES-B2	
D605	8-719-109-97	DIODE RD6.8ES-B2	
D606	8-719-109-97	DIODE RD6.8ES-B2	
D610	8-719-982-09	DIODE MTZ-4.3	
D611	8-719-109-97	DIODE RD6.8ES-B2	
D612	8-719-109-97	DIODE RD6.8ES-B2	
D613	8-719-109-97	DIODE RD6.8ES-B2	
D614	8-719-109-97	DIODE RD6.8ES-B2	
D615	8-719-109-97	DIODE RD6.8ES-B2	(E510VC1/VC2, E710, E810)
D616	8-719-109-97	DIODE RD6.8ES-B2	(E510VC1/VC2, E710, E810)
D617	8-719-109-97	DIODE RD6.8ES-B2	(E510VC1/VC2, E710, E810)
D618	8-719-109-97	DIODE RD6.8ES-B2	(E510VC1/VC2, E710, E810)
D651	8-719-109-97	DIODE RD6.8ES-B2	(E510VC1/VC2, E710, E810B/BZ/NP/UX/VC)
D652	8-719-109-97	DIODE RD6.8ES-B2	(E510VC1/VC2, E710, E810B/BZ/NP/UX/VC)
D653	8-719-921-86	DIODE MTZJ-13	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
D654	8-719-109-97	DIODE RD6.8ES-B2	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
D655	8-719-109-97	DIODE RD6.8ES-B2	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
D656	8-719-800-76	DIODE 1SS226	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
D660	8-719-982-09	DIODE MTZJ-4.3	(E510VC1/VC2, E710, E810B/BZ/NP/UX/VC)
D661	8-719-109-97	DIODE RD6.8ES-B2	(E510VC1/VC2, E710, E810B/BZ/NP/UX/VC)
D662	8-719-109-97	DIODE RD6.8ES-B2	(E510VC1/VC2, E710, E810B/BZ/NP/UX/VC)
D663	8-719-109-97	DIODE RD6.8ES-B2	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
D664	8-719-109-97	DIODE RD6.8ES-B2	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
D665	8-719-109-97	DIODE RD6.8ES-B2	(E510VC1/VC2, E710, E810B/BZ/NP/UX/VC)
D666	8-719-109-97	DIODE RD6.8ES-B2	(E510VC1/VC2, E710, E810B/BZ/NP/UX/VC)
D667	8-719-109-97	DIODE RD6.8ES-B2	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
D668	8-719-109-97	DIODE RD6.8ES-B2	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
⚠D702	8-719-800-76	DIODE 1SS226	
D703	8-719-110-78	DIODE RD33ES-B2	
D708	8-719-911-19	DIODE 1SS119-25	
D709	8-719-109-85	DIODE RD5.1ES-B2	
D710	8-719-911-19	DIODE 1SS119-25	
D711	8-719-108-12	DIODE RD9.1EW	
D853	8-719-911-19	DIODE 1SS119-25	(E510)
D902	8-719-200-82	DIODE 11ES2	

< FILTER >

Ref. No.	Part No.	Description	Remark
FL611	1-236-163-11	ENCAPSULATED COMPONENT	
FL613	1-236-163-11	ENCAPSULATED COMPONENT	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

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Ref. No.	Part No.	Description	Remark
FL615	1-236-163-11	ENCAPSULATED COMPONENT (E510VC1/VC2, E710, E810)	
FL617	1-236-163-11	ENCAPSULATED COMPONENT (E510VC1/VC2, E710, E810)	
FL626	1-236-163-11	ENCAPSULATED COMPONENT (E710, E810)	
FL628	1-236-163-11	ENCAPSULATED COMPONENT (E710, E810)	
FL661	1-236-163-11	ENCAPSULATED COMPONENT (E510VC1/VC2, E710, E810B/BZ/NP/UX/VC)	
FL663	1-236-163-11	ENCAPSULATED COMPONENT (E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)	
FL665	1-236-163-11	ENCAPSULATED COMPONENT (E510VC1/VC2, E710, E810B/BZ/NP/UX/VC)	
FL667	1-236-163-11	ENCAPSULATED COMPONENT (E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)	

< IC >

Ref. No.	Part No.	Description	Remark
IC101	8-759-246-14	IC TA8823N	
IC131	8-759-289-73	IC SDA5649X-GEG	
IC151	8-752-870-41	IC CXP82960-010Q (E510VC1/VC2, E710NC/NP/UX/VC/VP, E810NP/UX/VC)	
IC151	8-752-870-37	IC CXP82960-004Q (E510EE, E810EE)	
IC151	8-752-870-40	IC CXP82960-009Q (E710B, E810B/BZ)	
IC152	8-759-248-87	IC MM1256XF-BE	
IC153	8-759-278-56	IC AK6440HF-E2	
IC201	8-752-852-06	IC CXP87248A-016Q	
IC251	8-759-335-76	IC uPC5023GR-089-E2	
IC291	8-759-294-26	IC BA6209-V2	
IC301	1-801-153-11	IC YC MODULE, 3 (PAL)	
IC401	8-759-363-39	IC MB90089PF-G-150 (E510VC1/VC2, E710, E810B/BZ/NP/UX/VC)	
IC401	8-759-363-41	IC MB90089PF-G-158 (E510EE, E810EE)	
IC402	8-759-164-09	IC LA7218M	
IC441	1-810-636-11	IC LA7356M-TLM (510EE, E710B, E810B/BZ/EE)	
IC451	1-809-959-12	IC TME656 (E710B, E810B/BZ)	
IC461	8-759-295-66	IC BA7653AF-E2	
IC471	8-759-280-24	IC BA7630F-E2 (E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)	
IC481	8-759-710-86	IC NJM2233BM (E810UX)	
IC501	8-759-365-32	IC XLH7779K-VP (E710, E810)	
IC551	8-759-089-84	IC BA7755AF (E710, E810)	
IC771	8-759-280-23	IC BA7632F-E2 (E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)	
IC779	8-759-296-72	IC PQ12SZ5U (E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)	
IC791	8-759-280-23	IC BA7632F-E2(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)	
IC851	8-759-268-02	IC BA7796FS-E2 (E510)	

< JUMPER RESISTOR >

Ref. No.	Part No.	Description	Remark
JP43	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W (E510VC1/VC2, E710NC/NP/UX/VC/VP, E810NP/UX/VC)	
JP53	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W (E510VC1/VC2, E710NC/NP/UX/VC/VP, E810NP/UX/VC)	
JP54	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W (E510VC1/VC2, E710NC/NP/UX/VC/VP, E810NP/UX/VC)	
JP55	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W (E510VC1/VC2, E710NC/NP/UX/VC/VP, E810NP/UX/VC)	
JP56	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W (E510VC1/VC2, E710NC/NP/UX/VC/VP, E810NP/UX/VC)	
JP63	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W (E510VC1/VC2, E710NC/NP/UX/VC/VP, E810NP/UX/VC)	
JP64	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W (E510VC1/VC2, E710NC/NP/UX/VC/VP, E810NP/UX/VC)	
JP65	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W (E510VC1/VC2, E710NC/NP/UX/VC/VP, E810NP/UX/VC)	
JP77	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W (E510VC1/VC2, E710NC/NP/UX/VC/VP, E810NP/UX/VC)	
JP78	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W (E510VC1/VC2, E710NC/NP/UX/VC/VP, E810NP/UX/VC)	
JP81	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W (E510VC1/VC2, E710NC/NP/UX/VC/VP, E810NP/UX/VC)	
JP82	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W (E510VC1/VC2, E710NC/NP/UX/VC/VP, E810NP/UX/VC)	
JP83	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W (E510VC1/VC2, E710UX/VP, E810UX/VC)	
JP90	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W (E510VC1/VC2, E710NC/NP/UX/VC/VP, E810NP/UX/VC)	
JP95	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W (E510VC1/VC2)	
JP96	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W (E510VC1/VC2)	
JP043	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W (E510EE, E710B, E810B/BZ/EE)	

Ref. No.	Part No.	Description	Remark
JP053	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W	(E510EE, E710B, E810B/BZ/EE)
JP054	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W	(E510EE, E710B, E810B/BZ/EE)
JP055	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W	(E510EE, E710B, E810B/BZ/EE)
JP056	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W	(E510EE, E710B, E810B/BZ/EE)
JP063	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W	(E510EE, E710B, E810B/BZ/EE)
JP064	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W	(E510EE, E710B, E810B/BZ/EE)
JP065	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W	(E510EE, E710B, E810B/BZ/EE)
JP077	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W	(E510EE, E710B, E810B/BZ/EE)
JP078	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W	(E510EE, E710B, E810B/BZ/EE)
JP081	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W	(E510EE, E710B, E810B/BZ/EE)
JP082	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W	(E510EE, E710B, E810B/BZ/EE)
JP083	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	(E510EE, E710B/EX/NC/NP/VC, E810B/BZ/EE/NP)
JP090	1-216-296-91	CONDUCTOR, CHIP 0 5% 1/8W	(E510EE, E710B, E810B/BZ/EE)
JP095	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	(E510EE)
JP096	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	(E510EE)

< JUMPER RESISTOR >

Ref. No.	Part No.	Description	Remark
JR101	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
JR202	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	(E510)
JR252	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
JR253	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
JR301	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	(E710B, E810B/BZ)
JR321	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	(E510EE, E710B, E810B/BZ/EE)
JR404	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	
JR471	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	(E510EE, E710EX/NC/UX/VP, E810EE/UX)
JR472	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	(E510EE, E710EX/NC/UX/VP, E810EE)
JR478	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	(E810UX)
JR479	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	(E710EX/NC/UX/VP)
JR576	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	(E710, E810)
JR601	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	(E510EE, E710EX/NC/UX/VP, E810EE/UX)
JR602	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	(E510EE, E710EX/NC/UX/VP, E810EE/UX)
JR603	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
JR708	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	(E510VC1/VC2)
JR851	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	(E510)
JR852	1-216-073-00	METAL CHIP 10K 5% 1/10W	(E510)
JR854	1-216-085-00	METAL CHIP 33K 5% 1/10W	(E510VC1/VC2)
JR854	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	(E510EE)
JR856	1-216-041-00	METAL CHIP 470 5% 1/10W	(E510VC1/VC2)
JR856	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	(E510EE)
JR885	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	(E510, E710)
JR895	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	(E810)
JR901	1-216-295-91	CONDUCTOR, CHIP 0 5% 1/10W	(E510EE, E810)

< COIL >

Ref. No.	Part No.	Description	Remark
L101	1-408-421-00	INDUCTOR 100uH	
L151	1-408-970-21	INDUCTOR 10uH	
L201	1-408-970-21	INDUCTOR 10uH	
L301	1-410-520-31	INDUCTOR 82uH	
L302	1-414-186-31	INDUCTOR 33uH	
L303	1-414-520-31	INDUCTOR 82uH	
L304	1-414-186-31	INDUCTOR 33uH	
L305	1-414-186-31	INDUCTOR 33uH	
L306	1-410-516-11	INDUCTOR 39uH	(E710B, E810B/BZ)
L351	1-410-524-41	INDUCTOR 180uH	
L352	1-414-189-31	INDUCTOR 100uH	
L353	1-410-513-11	INDUCTOR 22uH	
L401	1-408-421-00	INDUCTOR 100uH	
L402	1-410-515-11	INDUCTOR 33uH	(E510EE, E710B, E810B/BZ/EE)
L403	1-412-470-21	INDUCTOR 22uH	
L404	1-408-421-00	INDUCTOR 100uH	
L444	1-414-189-31	INDUCTOR 100uH	(E510EE, E710B, E810B/BZ/EE)
L451	1-414-186-31	INDUCTOR 33uH	(E710B, E810B/BZ)

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Ref. No.	Part No.	Description	Remark
L461	1-414-189-31	INDUCTOR 100uH	
L481	1-414-189-31	INDUCTOR 100uH	(E810UX)
L651	1-410-482-31	INDUCTOR 100uH	(E510EE, E710EX/NC/UX/VP, E810EE/UX)
L701	1-414-183-41	INDUCTOR 10uH	
L702	1-414-189-31	INDUCTOR 100uH	
L703	1-414-183-41	INDUCTOR 10uH	
L704	1-410-501-11	INDUCTOR 2.2uH	
L705	1-414-183-41	INDUCTOR 10uH	
L706	1-410-501-11	INDUCTOR 2.2uH	
L779	1-410-517-11	INDUCTOR 47uH	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
L851	1-410-482-31	INDUCTOR 100uH	(E510)
L881	1-410-687-11	INDUCTOR 1.2mH	
L891	1-410-687-11	INDUCTOR 1.2mH	(E810)
		< PIN CABLE >	
P701	1-555-110-00	CABLE, PIN	(E710, E810)
		< PHOTO INTERRUPTER >	
PH261	8-749-010-19	PHOTO INTERRUPTER GP3S113	
PH262	8-749-010-20	PHOTO INTERRUPTER GP3S114	
		< IC LINK >	
⚠PS271	1-532-727-11	LINK, IC ICP-N5 (0.25A)	
⚠PS885	1-532-727-11	LINK, IC ICP-N5 (0.25A)	
		< THERMISTOR >	
⚠PTH592	1-202-855-00	THERMISTOR, POSITIVE	(E710, E810)
		< TRANSISTOR >	
Q131	8-729-216-22	TRANSISTOR 2SA1162-G	
Q201	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q202	8-729-901-06	TRANSISTOR DTA144EK	
Q261	8-729-025-92	PHOTO TRANSISTOR PT380F	
Q262	8-729-025-92	PHOTO TRANSISTOR PT380F	
Q263	8-729-281-53	TRANSISTOR 2SC1815-GR	
Q303	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q305	8-729-901-06	TRANSISTOR DTA144EK	
Q306	8-729-901-01	TRANSISTOR DTC144EK	
Q322	8-729-901-01	TRANSISTOR DTC144EK	(E710B, E810B/BZ)
Q352	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q353	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q401	8-729-901-01	TRANSISTOR DTC144EK	(E510EE, E710B, E810B/BZ/EE)
Q402	8-729-901-06	TRANSISTOR DTA144EK	
Q404	8-729-216-22	TRANSISTOR 2SA1162-G	

Ref. No.	Part No.	Description	Remark
Q405	8-729-120-28	TRANSISTOR 2SC1623-L5L6	(E510EE, E710B, E810B/BZ/EE)
Q406	8-729-216-22	TRANSISTOR 2SA1162-G	
Q407	8-729-216-22	TRANSISTOR 2SA1162-G	
Q408	8-729-120-28	TRANSISTOR 2SC1623-L5L6	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
Q413	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q451	8-729-901-06	TRANSISTOR DTA144EK	
Q455	8-729-901-01	TRANSISTOR DTC144EK	(E710B, E810B/BZ)
Q456	8-729-901-01	TRANSISTOR DTC144EK	(E710B, E810B/BZ)
Q522	8-729-901-01	TRANSISTOR DTC144EK	(E810)
Q532	8-729-901-01	TRANSISTOR DTC144EK	(E810)
Q591	8-729-804-41	TRANSISTOR 2SB1122-S	(E710, E810)
Q592	8-729-015-11	TRANSISTOR 2SD1802FAST-TL	(E710, E810)
Q593	8-729-901-06	TRANSISTOR DTA144EK	(E710, E810)
Q601	8-729-901-47	TRANSISTOR DTA143EK	
Q602	8-729-901-01	TRANSISTOR DTC144EK	
Q654	8-729-216-22	TRANSISTOR 2SA1162-G	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
Q656	8-729-120-28	TRANSISTOR 2SC1623-L5L6	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
Q657	8-729-216-22	TRANSISTOR 2SA1162-G	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
Q681	8-729-216-22	TRANSISTOR 2SA1162-G	
⚠Q701	8-729-901-01	TRANSISTOR DTC144EK	
Q703	8-729-173-38	TRANSISTOR 2SA733-K	
Q704	8-729-106-68	TRANSISTOR 2SD1615A-GP	
Q705	8-729-216-22	TRANSISTOR 2SA1162-G	
Q706	8-729-901-01	TRANSISTOR DTC144EK	
Q709	8-729-120-28	TRANSISTOR 2SC1623-L5L6	(E510)
Q710	8-729-216-22	TRANSISTOR 2SA1162-G	
Q711	8-729-900-98	TRANSISTOR DTC143TK	
Q712	8-729-900-98	TRANSISTOR DTC143TK	(E710, E810)
Q713	8-729-900-98	TRANSISTOR DTC143TK	(E710, E810)
Q714	8-729-216-22	TRANSISTOR 2SA1162-G	
Q761	8-729-120-28	TRANSISTOR 2SC1623-L5L6	(E510VC1/VC2)
Q781	8-729-120-28	TRANSISTOR 2SC1623-L5L6	(E510VC1/VC2)
Q853	8-729-900-98	TRANSISTOR DTC143TK	(E510)
Q881	8-729-012-31	TRANSISTOR 2SC4040-TL2-Q	
Q882	8-729-900-51	TRANSISTOR DTA114TK	
Q886	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q891	8-729-012-31	TRANSISTOR 2SC4040-TL2-Q	(E810)
Q892	8-729-900-51	TRANSISTOR DTA114TK	(E810)
		< RESISTOR >	
R101	1-216-119-00	METAL CHIP 820K 5% 1/10W	
R102	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R103	1-216-097-91	METAL GLAZE 100K 5% 1/10W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
R104	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R105	1-216-085-00	METAL CHIP	33K	5%	1/10W
R106	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R107	1-216-186-00	METAL GLAZE	330	5%	1/8W
R108	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R111	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R133	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R134	1-216-117-00	METAL CHIP	680K	5%	1/10W
R135	1-216-123-11	METAL CHIP	1.2M	5%	1/10W
R136	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R137	1-216-123-11	METAL CHIP	1.2M	5%	1/10W
R138	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R139	1-216-025-91	METAL GLAZE	100	5%	1/10W
R140	1-216-079-00	METAL CHIP	18K	5%	1/10W
R141	1-216-083-00	METAL CHIP	27K	5%	1/10W
R142	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R143	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R151	1-216-095-00	METAL CHIP	82K	5%	1/10W (E810)
R151	1-216-073-00	METAL CHIP	10K	5%	1/10W (E510, E710)
R152	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R153	1-216-113-00	METAL CHIP	470K	5%	1/10W
R154	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R157	1-216-113-00	METAL CHIP	470K	5%	1/10W
R158	1-216-095-00	METAL CHIP	82K	5%	1/10W
R159	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R160	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R161	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R162	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R163	1-216-073-00	METAL CHIP	10K	5%	1/10W
R164	1-216-073-00	METAL CHIP	10K	5%	1/10W
R165	1-216-073-00	METAL CHIP	10K	5%	1/10W
R166	1-216-073-00	METAL CHIP	10K	5%	1/10W
R167	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R168	1-216-095-00	METAL CHIP	82K	5%	1/10W (E810)
R168	1-216-073-00	METAL CHIP	10K	5%	1/10W (E510, E710)
R169	1-216-113-00	METAL CHIP	470K	5%	1/10W
R170	1-216-295-91	METAL CHIP	0	5%	1/10W
R171	1-216-295-91	METAL CHIP	0	5%	1/10W
R201	1-216-073-00	METAL CHIP	10K	5%	1/10W
R203	1-216-073-00	METAL CHIP	10K	5%	1/10W
R204	1-216-073-00	METAL CHIP	10K	5%	1/10W
R205	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R206	1-216-073-00	METAL CHIP	10K	5%	1/10W
R207	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R208	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R209	1-216-073-00	METAL CHIP	10K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R210	1-216-073-00	METAL CHIP	10K	5%	1/10W
R211	1-216-101-00	METAL CHIP	150K	5%	1/10W (E510)
R211	1-216-107-00	METAL CHIP	270K	5%	1/10W (E710, E810)
R212	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R213	1-216-077-00	METAL CHIP	15K	5%	1/10W
R214	1-216-085-00	METAL CHIP	33K	5%	1/10W
R215	1-216-095-00	METAL CHIP	82K	5%	1/10W
R216	1-216-083-00	METAL CHIP	27K	5%	1/10W (E510)
R217	1-216-085-00	METAL CHIP	33K	5%	1/10W (E510)
R218	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R219	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R233	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R234	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R251	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R252	1-216-079-00	METAL CHIP	18K	5%	1/10W
R253	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R254	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R255	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R256	1-216-103-91	METAL GLAZE	180K	5%	1/10W
R261	1-249-400-11	CARBON	39	5%	1/4W
R262	1-249-400-11	CARBON	39	5%	1/4W
R263	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R264	1-216-107-00	METAL CHIP	270K	5%	1/10W
R265	1-216-107-00	METAL CHIP	270K	5%	1/10W
R266	1-249-413-11	CARBON	470	5%	1/4W
R267	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R268	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R271	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R274	1-216-083-00	METAL CHIP	27K	5%	1/10W
R275	1-216-093-00	METAL CHIP	68K	5%	1/10W
R276	1-216-056-00	METAL GLAZE	2K	5%	1/10W
R277	1-216-068-00	METAL CHIP	6.2K	5%	1/10W
R278	1-216-075-00	METAL CHIP	12K	5%	1/10W
R281	1-216-238-91	METAL GLAZE	47K	5%	1/8W
R282	1-216-238-91	METAL GLAZE	47K	5%	1/8W
R283	1-216-238-91	METAL GLAZE	47K	5%	1/8W
R284	1-216-238-91	METAL GLAZE	47K	5%	1/8W
R293	1-216-295-91	METAL CHIP	0	5%	1/10W
R302	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W (E510)
R303	1-216-025-00	METAL CHIP	100	5%	1/10W (E510)
R303	1-216-037-00	METAL CHIP	330	5%	1/10W (E710, E810)
R304	1-208-798-11	METAL GLAZE	4.7K	0.50%	1/10W
R305	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R306	1-216-081-00	METAL CHIP	22K	5%	1/10W
R307	1-216-041-00	METAL CHIP	470	5%	1/10W
R308	1-216-069-00	METAL CHIP	6.8K	5%	1/10W

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Ref. No.	Part No.	Description				Remark
R310	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R311	1-216-045-00	METAL CHIP	680K	5%	1/10W	
R312	1-216-073-00	METAL CHIP	10K	5%	1/10W	(E510, E710B/EX/NC/UX/VC/VP, E810)
R313	1-216-295-91	METAL CHIP	0	5%	1/10W	
R314	1-216-113-00	METAL CHIP	470K	5%	1/10W	(E510VC1/VC2)
R314	1-216-091-91	METAL CHIP	56K	5%	1/10W	(EXCEPT E510VC1/VC2)
R315	1-216-103-91	METAL GLAZE	180K	5%	1/10W	(E510)
R315	1-216-107-00	METAL CHIP	270K	5%	1/10W	(E710, E810)
R316	1-216-049-91	METAL GLAZE	1K	5%	1/10W	(E510EE, E710B, E810B/BZ/EE)
R317	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R321	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	(E710B, E810B/BZ)
R324	1-216-296-91	METAL CHIP	0	5%	1/8W	(E510EE, E710B, E810B/BZ/EE)
R351	1-216-049-91	METAL GLAZE	1K	5%	1/10W	(E510)
R351	1-216-047-91	METAL GLAZE	820	5%	1/10W	(E710, E810)
R352	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R353	1-216-045-00	METAL CHIP	680	5%	1/10W	
R354	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R355	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R356	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R357	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R358	1-216-041-00	METAL CHIP	470	5%	1/10W	
R401	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R402	1-216-073-00	METAL CHIP	10K	5%	1/10W	(E510EE, E710B, E810B/BZ/EE)
R403	1-216-073-00	METAL CHIP	10K	5%	1/10W	(E510EE, E710B, E810B/BZ/EE)
R404	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R407	1-249-414-11	CARBON	560	5%	1/4W	
R408	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R409	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W	
R410	1-216-043-91	METAL GLAZE	560	5%	1/10W	
R411	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R412	1-216-295-91	METAL CHIP	0	5%	1/10W	
R413	1-216-295-91	METAL CHIP	0	5%	1/10W	
R414	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R415	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R416	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R417	1-216-033-00	METAL CHIP	220	5%	1/10W	
R418	1-216-033-00	METAL CHIP	220	5%	1/10W	
R421	1-216-230-00	METAL GLAZE	22K	5%	1/8W	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
R422	1-216-049-91	METAL GLAZE	1K	5%	1/10W	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
R423	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R424	1-216-025-91	METAL GLAZE	100	5%	1/10W	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
R442	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	(E510EE, E710B, E810B/BZ/EE)
R443	1-216-070-00	METAL CHIP	7.5K	5%	1/10W	(E510EE, E710B, E810B/BZ/EE)
R455	1-216-073-00	METAL CHIP	10K	5%	1/10W	(E710B, E810B/BZ)
R461	1-216-295-91	METAL CHIP	0	5%	1/10W	
R462	1-216-017-91	METAL GLAZE	47	5%	1/10W	
R463	1-216-295-91	METAL CHIP	0	5%	1/10W	
R471	1-216-073-00	METAL CHIP	10K	5%	1/10W	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
R472	1-216-073-00	METAL CHIP	10K	5%	1/10W	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
R473	1-216-033-00	METAL CHIP	220	5%	1/10W	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
R474	1-216-033-00	METAL CHIP	220	5%	1/10W	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
R475	1-216-073-00	METAL CHIP	10K	5%	1/10W	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
R477	1-216-073-00	METAL CHIP	10K	5%	1/10W	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
R481	1-216-025-91	METAL GLAZE	100	5%	1/10W	(E810UX)
R482	1-216-296-91	METAL CHIP	0	5%	1/8W	(E810UX)
R483	1-216-296-91	METAL CHIP	0	5%	1/8W	(E810UX)
R501	1-216-079-00	METAL CHIP	18K	5%	1/10W	(E710, E810)
R502	1-216-079-00	METAL CHIP	18K	5%	1/10W	(E710, E810)
R503	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	(E810)
R503	1-216-079-00	METAL CHIP	18K	5%	1/10W	(E710EX/NC/UX/VP)
R504	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	(E810)
R504	1-216-079-00	METAL CHIP	18K	5%	1/10W	(E710EX/NC/UX/VP)
R505	1-216-295-91	METAL CHIP	0	5%	1/10W	(E710, E810)
R506	1-216-295-91	METAL CHIP	0	5%	1/10W	(E710, E810)

Ref. No.	Part No.	Description	Remark
R507	1-216-295-91	METAL CHIP 0 5% 1/10W	(E710, E810)
R508	1-216-079-00	METAL CHIP 18K 5% 1/10W	(E710B/NP/VC, E810B/BZ/NP/UX/VC)
R509	1-216-079-00	METAL CHIP 18K 5% 1/10W	(E710B/NP/VC, E810B/BZ/NP/UX/VC)
R510	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	(E710, E810)
R511	1-216-295-91	METAL CHIP 0 5% 1/10W	(E710EX/NC/UX/VP)
R512	1-216-295-91	METAL CHIP 0 5% 1/10W	(E710EX/NC/UX/VP)
R514	1-216-049-91	METAL GLAZE 1K 5% 1/10W	(E710, E810)
R515	1-216-049-91	METAL GLAZE 1K 5% 1/10W	(E710, E810)
R521	1-216-073-00	METAL CHIP 10K 5% 1/10W	(E710, E810)
R522	1-216-050-00	METAL GLAZE 1.1K 5% 1/10W	(E710, E810)
R523	1-216-079-00	METAL CHIP 18K 5% 1/10W	(E710, E810)
R524	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	(E710, E810)
R525	1-208-809-11	METAL GLAZE 13K 0.50% 1/10W	(E810)
R525	1-208-808-11	METAL GLAZE 12K 0.50% 1/10W	(E710)
R526	1-216-103-91	METAL GLAZE 180K 5% 1/10W	(E810)
R531	1-216-073-00	METAL CHIP 10K 5% 1/10W	(E710, E810)
R532	1-216-050-00	METAL GLAZE 1.1K 5% 1/10W	(E710, E810)
R533	1-216-079-00	METAL CHIP 18K 5% 1/10W	(E710, E810)
R534	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	(E710, E810)
R535	1-208-804-11	METAL GLAZE 8.2K 0.50% 1/10W	(E710)
R535	1-208-806-11	METAL GLAZE 10K 0.50% 1/10W	(E810)
R536	1-216-103-91	METAL GLAZE 180K 5% 1/10W	(E810)
R541	1-216-081-00	METAL CHIP 22K 5% 1/10W	(E710, E810)
R551	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	(E710, E810)
R561	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R562	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R563	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R564	1-216-041-00	METAL CHIP 470 5% 1/10W	
R565	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R566	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R567	1-216-295-91	METAL CHIP 0 5% 1/10W	(E710, E810)
R571	1-216-049-00	METAL CHIP 18K 5% 1/10W	(E710, E810)
R572	1-216-083-00	METAL CHIP 27K 5% 1/10W	(E710, E810)
R573	1-216-214-00	METAL GLAZE 4.7K 5% 1/8W	(E710, E810)
R575	1-216-295-91	METAL CHIP 0 5% 1/10W	(E710, E810)
R591	1-249-423-11	CARBON 3.3K 5% 1/4W	(E710, E810)
R592	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	(E710, E810)
R593	1-216-049-91	METAL GLAZE 1K 5% 1/10W	(E710, E810)
R601	1-216-022-00	METAL CHIP 75 5% 1/10W	
R602	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R603	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R611	1-216-041-00	METAL CHIP 470 5% 1/10W	
R612	1-216-041-00	METAL CHIP 470 5% 1/10W	
R613	1-216-041-00	METAL CHIP 470 5% 1/10W	
R614	1-216-295-91	METAL CHIP 0 5% 1/10W	
R616	1-216-295-91	METAL CHIP 0 5% 1/10W	(E510VC1/VC2, E710, E810)
R617	1-216-041-00	METAL CHIP 470 5% 1/10W	(E510VC1/VC2, E710, E810)
R626	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	(E710, E810)
R628	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	(E710, E810)
R651	1-216-022-00	METAL CHIP 75 5% 1/10W	(E510VC1/VC2, E710, E810B/BZ/NP/UX/VC)
R652	1-216-238-91	METAL GLAZE 47K 5% 1/8W	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
R653	1-216-234-00	METAL GLAZE 33K 5% 1/8W	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
R654	1-216-049-91	METAL GLAZE 1K 5% 1/10W	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
R656	1-216-022-00	METAL CHIP 75 5% 1/10W	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
R657	1-216-049-91	METAL GLAZE 1K 5% 1/10W	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
R658	1-216-063-91	METAL GLAZE 3.9K 5% 1/10W	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)

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Ref. No.	Part No.	Description	Remark
R661	1-216-190-00	METAL GLAZE 470 5% 1/8W	(E510VC1/VC2, E710, E810B/BZ/NP/UX/VC)
R662	1-216-041-00	METAL CHIP 470 5% 1/10W	(E510VC1/VC2, E710, E810B/BZ/NP/UX/VC)
R663	1-216-041-00	METAL CHIP 470 5% 1/10W	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
R667	1-216-041-00	METAL CHIP 470 5% 1/10W	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
R681	1-216-037-00	METAL CHIP 330 5% 1/10W	
R683	1-249-407-11	CARBON 150 5% 1/4W	
R684	1-249-408-11	CARBON 180 5% 1/4W	
R685	1-216-021-00	METAL CHIP 68 5% 1/10W	
R701	1-216-041-00	METAL CHIP 470 5% 1/10W	(E710, E810)
R702	1-216-041-00	METAL CHIP 470 5% 1/10W	(E710, E810)
R703	1-249-404-00	CARBON 82 5% 1/4W	
R704	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R705	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R706	1-216-083-00	METAL CHIP 27K 5% 1/10W	(E510, E710NC/NP/UX/VC/VP, E810EE/NP/UX/VC)
R706	1-216-105-91	METAL GLAZE 220K 5% 1/10W	(E710B, E810B/BZ)
R709	1-216-049-91	METAL GLAZE 1K 5% 1/10W	(E510)
R710	1-216-049-91	METAL GLAZE 1K 5% 1/10W	(E710, E810)
R711	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R712	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R713	1-216-041-00	METAL CHIP 470 5% 1/10W	(E510)
R714	1-216-041-00	METAL CHIP 470 5% 1/10W	(E510)
R715	1-216-025-91	METAL GLAZE 100 5% 1/10W	(E510)
R719	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R720	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R721	1-216-037-00	METAL CHIP 330 5% 1/10W	
R722	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R723	1-216-230-00	METAL GLAZE 22K 5% 1/8W	(E710, E810)
R723	1-216-242-91	METAL GLAZE 68K 5% 1/8W	(E510)
R724	1-249-417-11	CARBON 1K 5% 1/4W	
R725	1-216-049-91	METAL GLAZE 1K 5% 1/10W	(B710B, E810B/BZ)
R727	1-216-049-91	METAL GLAZE 1K 5% 1/10W	(E710B, E810B/BZ/EE)
R731	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R732	1-216-025-91	METAL GLAZE 100 5% 1/10W	

Ref. No.	Part No.	Description	Remark
R738	1-216-025-91	METAL GLAZE 100 5% 1/10W	(E710, E810)
R739	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R740	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R741	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R761	1-216-097-91	METAL GLAZE 100K 5% 1/10W	(E510VC1/VC2)
R762	1-216-097-91	METAL GLAZE 100K 5% 1/10W	(E510VC1/VC2)
R763	1-216-073-00	METAL CHIP 10K 5% 1/10W	(E510VC1/VC2)
R764	1-216-296-91	METAL CHIP 0 5% 1/8W	(E510EE, E710, E810)
R765	1-216-296-91	METAL CHIP 0 5% 1/8W	(E510EE)
R767	1-216-085-00	METAL CHIP 33K 5% 1/10W	(E510VC1/VC2)
R767	1-216-093-91	METAL CHIP 10K 5% 1/10W	(E510EE)
R778	1-216-296-91	METAL CHIP 0 5% 1/8W	(E510EE, E710EX/NC/UX/VP, E810EE/UX)
R781	1-216-097-91	METAL GLAZE 100K 5% 1/10W	(E510VC1/VC2)
R782	1-216-097-91	METAL GLAZE 100K 5% 1/10W	(E510VC1/VC2)
R783	1-216-073-00	METAL CHIP 10K 5% 1/10W	(E510VC1/VC2)
R784	1-216-296-91	METAL CHIP 0 5% 1/8W	(E510EE, E710, E810)
R785	1-216-041-00	METAL CHIP 470 5% 1/10W	(E510VC1/VC2)
R786	1-216-085-00	METAL CHIP 33K 5% 1/10W	(E510VC1/VC2)
R787	1-216-085-00	METAL CHIP 33K 5% 1/10W	(E510VC1/VC2)
R788	1-216-296-91	METAL CHIP 0 5% 1/8W	(E510EE, E710EX/NC/UX/VP, E810EE/UX)
R792	1-216-295-91	METAL CHIP 0 5% 1/10W	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
R793	1-216-295-91	METAL CHIP 0 5% 1/10W	(E510VC1/VC2, E710B/NP/VC, E810B/BZ/NP/VC)
R794	1-216-085-00	METAL CHIP 33K 5% 1/10W	(E510EE)
R851	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	(E510)
R852	1-216-049-91	METAL GLAZE 1K 5% 1/10W	(E510)
R853	1-216-041-00	METAL CHIP 470 5% 1/10W	(E510)
R854	1-216-085-00	METAL CHIP 33K 5% 1/10W	(E510VC1/VC2)

Ref. No.	Part No.	Description	Remark
R854	1-216-095-00	METAL CHIP 82K 5%	1/10W(E510EE)
R855	1-216-067-00	METAL CHIP 5.6K 5%	1/10W (E510VC1/VC2)
R855	1-216-073-00	METAL CHIP 10K 5%	1/10W(E510EE)
R856	1-216-689-11	METAL CHIP 39K 0.5%	1/10W (E510)
R857	1-216-069-00	METAL CHIP 6.8K 5%	1/10W (E510)
R858	1-216-085-00	METAL CHIP 33K 5%	1/10W (E510VC1/VC2)
R858	1-216-689-11	METAL CHIP 39K 0.5%	1/10W(E510EE)
R859	1-216-069-00	METAL CHIP 6.8K 5%	1/10W (E510)
R871	1-216-081-00	METAL CHIP 22K 5%	1/10W (E510)
R872	1-216-083-00	METAL CHIP 27K 5%	1/10W (E510)
R873	1-216-065-00	METAL CHIP 4.7K 5%	1/10W (E510)
R874	1-216-075-00	METAL CHIP 12K 5%	1/10W
R881	1-216-081-00	METAL CHIP 22K 5%	1/10W
⚠R882	1-249-395-11	CARBON 15 5%	1/4W F(E810)
R882	1-249-389-11	CARBON 4.7 5%	1/4W (E510, E710)
R885	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R886	1-216-073-00	METAL CHIP 10K 5%	1/10W
R887	1-216-089-91	METAL GLAZE 47K 5%	1/10W
R891	1-216-083-00	METAL CHIP 27K 5%	1/10W (E810)
⚠R892	1-249-394-11	CARBON 12 5%	1/4W F(E810)
R901	1-216-089-91	METAL GLAZE 47K 5%	1/10W (E510EE, E810)

< RF MODULATOR >

Ref. No.	Part No.	Description	Remark
⚠RF701	1-467-958-21	MODULATOR, RF (RFU-2100)	(E710, E810)

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV521	1-241-763-11	RES, ADJ, CERMET 4.7K	(E710, E810)
RV531	1-241-763-11	RES, ADJ, CERMET 4.7K	(E710, E810)
RV541	1-241-764-11	RES, ADJ, CERMET 10K	(E710, E810)

< SWITCH >

Ref. No.	Part No.	Description	Remark
S251	1-570-953-11	SWITCH, PUSH (1 KEY) (REC PRF)	
S702	1-571-588-11	SWITCH, SLIDE (RF MODULATOR)	
S901	1-571-588-11	SWITCH, SLIDE (NTSC PB)	(E510EE, E810)

< TRANSFORMER >

Ref. No.	Part No.	Description	Remark
T881	1-423-413-11	TRANSFORMER, BIAS OSCILLATION	(E810)
T881	1-423-414-11	TRANSFORMER, BIAS OSCILLATION	(E510, E710)
T891	1-423-415-11	TRANSFORMER, BIAS OSCILLATION	(E810)

< TUNER >

Ref. No.	Part No.	Description	Remark
⚠TU701	1-693-269-21	TUNER, IF (BTF-3WC441)	(E710B, E810B)
⚠TU701	1-693-274-21	TUNER, IF (BTF-3WC431)	(E710EX)
⚠TU701	1-693-273-21	TUNER, IF (BTF-3WU601)	(E710UX, E810UX)
⚠TU701	1-693-325-11	TUNER IF (BTF-3WC442)	(E810BZ)
⚠TU701	1-693-326-11	TUNER, IF (BTF-3WC424)	(E810EE)
⚠TU701	1-693-267-21	TUNER, IF (BTF-3WC401)	(E810VC, E710VC/VP)
⚠TU701	1-693-272-21	TUNER, IF (BTF-3WC411)	(E810NP, E710NC/NP)
⚠TU703	1-693-324-11	TUNER, IF (BTF-3MC423)	(E510EE)
⚠TU703	1-693-279-21	TUNER, IF (BTF-3MC422)	(E510VC1/VC2)

< VIBRATOR >

Ref. No.	Part No.	Description	Remark
X151	1-579-463-11	VIBRATOR, CRYSTAL (32.768kHz)	
X152	1-760-995-11	VIBLATOR, CERAMIC (16MHz)	
X201	1-760-494-11	VIBRATOR, CRYSTAL (16MHz)	
X401	1-577-289-11	VIBRATOR, CRYSTAL (14MHz)	
X402	1-577-165-11	VIBLATOR, CERAMIC (500kHz)	

Ref. No.	Part No.	Description	Remark
*	A-6782-838-A	MF-285 BOARD, COMPLETE	(E510, E810)
*	A-6782-863-A	MF-285 BOARD, COMPLETE	(E710)

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(Ref. No. 1,000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C201	1-163-035-00	CERAMIC CHIP 0.047u	50V (E510, E810)

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN201	1-695-368-31	CONNECTOR, FFC/FPC 7P	

< LED >

Ref. No.	Part No.	Description	Remark
D201	8-719-056-07	LED SLR-342MC3F	
D202	8-719-056-07	LED SLR-342MC3F	
D203	8-719-045-62	LED SLR-342VC-A-47	

< IC >

Ref. No.	Part No.	Description	Remark
IC201	1-466-833-11	IC RAY-CATCHER BLOCK, REMOCON	(E510, E810)

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q201	8-729-900-53	TRANSISTOR DTC114EK	
Q202	8-729-901-04	TRANSISTOR DTA114EK	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R201	1-216-089-91	METAL GLAZE 47K 5%	1/10W (E510, E810)
R202	1-216-021-00	METAL CHIP 68 5%	1/10W
R203	1-216-033-00	METAL CHIP 220 5%	1/10W

The components identified by
mark ⚠ or dotted line with mark
⚠ are critical for safety.
Replace only with part number
specified.

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
S201	1-571-977-11	SWITCH, TACTIL (POWER)	
*	A-6782-850-A	PS-357 BOARD, COMPLETE (E510EE/VC1/VC2)	
*	A-6782-864-A	PS-357 BOARD, COMPLETE (E710, E810)	
		**********************	
		(Ref. No. 1,000 Series)	
	1-533-293-11	FUSE HOLDER	
	1-533-223-11	HOLDER, FUSE	
	7-685-646-81	SCREW +BVTP 3X8 TYPE2	
		< CAPACITOR >	
⚠C101	1-104-706-11	FILM 0.22uF 20% 250V	
⚠C102	1-104-705-11	FILM 0.1uF 20% 250V	
⚠C103	1-107-405-11	ELECT 68uF 20% 400V	
⚠C104	1-113-935-11	ELECT 0.001uF 99% 125V	
⚠C105	1-113-935-11	ELECT 0.001uF 99% 125V	
⚠C106	1-113-935-11	ELECT 0.001uF 99% 125V	
⚠C107	1-113-935-11	ELECT 0.001uF 99% 125V	
⚠C108	1-113-935-11	ELECT 0.001uF 99% 125V	
C121	1-126-935-11	ELECT 470uF 20% 16V	
C122	1-126-926-11	ELECT 1000uF 20% 10V	
C125	1-128-551-11	ELECT 22uF 20% 25V	
C131	1-128-499-11	ELECT 220uF 20% 16V	
C132	1-128-551-11	ELECT 22uF 20% 25V	
C133	1-126-934-11	ELECT 220uF 20% 16V	
C141	1-126-967-11	ELECT 47uF 20% 16V	
C142	1-126-933-11	ELECT 100uF 20% 16V	
C161	1-126-967-11	ELECT 47uF 20% 16V	
C162	1-126-924-11	ELECT 330uF 20% 10V	
C171	1-126-924-11	ELECT 330uF 20% 10V	
C181	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C182	1-126-967-11	ELECT 47uF 20% 16V	
C183	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C184	1-126-967-11	ELECT 47uF 20% 50V	
C185	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C186	1-126-967-11	ELECT 47uF 20% 50V	
C187	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C188	1-126-967-11	ELECT 47uF 20% 50V	
C189	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C190	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C191	1-124-248-00	ELECT 22uF 20% 35V	(E710, E810)
		< AC INLET >	
⚠CJ101	1-251-134-11	INLET, AC (NONPOLAR) (AC IN ~)	

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
CN101	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P	
		< COMPOSITION CIRCUIT BLOCK >	
⚠CP101	1-468-084-11	POWER BLOCK (E510EE/VC1/VC2, E710B/EX/NC/NP/UX/VC/VP, E810B/BZ/EE/NP/UX/VC)	
⚠CP102	1-467-811-12	UNIT, DC-DC CONVERTER	
		< DIODE >	
⚠D101	8-719-510-06	DIODE S1WB60	
D161	8-719-911-19	DIODE 1SS119-25	
D162	8-719-109-85	DIODE RD5.1ES-B2	
		< FUSE >	
⚠F101	1-532-203-00	FUSE (T2AL/250V)	
		< IC >	
⚠IC141	8-759-189-48	IC PQ12RE11	
		< COIL >	
⚠L121	1-403-588-11	CIL, CHOKE 22uH	
⚠L122	1-403-588-11	CIL, CHOKE 22uH	
L181	1-408-970-21	INDUCTOR 10uH	
L182	1-414-142-11	INDUCTOR 1uH	
L183	1-414-142-11	INDUCTOR 1uH	
L184	1-410-322-11	INDUCTOR 3.3UH	
		< LINE FILTER >	
⚠LF101	1-424-485-11	FILTER, LINE	
⚠LF102	1-403-599-11	FILTER, LINE 33MH	
⚠LF103	1-403-599-11	FILTER, LINE 33MH	
		< IC LINK >	
⚠PS121	1-532-637-00	LINK, IC ICP-N25(1.0A)	
⚠PS122	1-532-637-00	LINK, IC ICP-N25(1.0A)	
⚠PS123	1-532-637-00	LINK, IC ICP-N25(1.0A)	
⚠PS181	1-532-605-00	LINK, IC ICP-N10(0.4A)	
		< TRANSISTOR >	
⚠Q131	8-729-140-93	TRANSISTOR 2SB733-34	
Q132	8-729-900-53	TRANSISTOR DTC114EK	
⚠Q161	8-729-140-98	TRANSISTOR 2SD773-34	
Q181	8-729-140-93	TRANSISTOR 2SB733-34	
Q182	8-729-900-53	TRANSISTOR DTC114EK	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

< RESISTOR >

Ref. No.	Part No.	Description			Remark
⚠R101	1-214-947-00	METAL	2.7M	1%	1/2W
R125	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R131	1-249-417-11	CARBON	1K	5%	1/4W
R132	1-216-430-11	METAL OXIDE	390	5%	1W
R133	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R141	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R161	1-249-412-11	CARBON	390	5%	1/4W
R182	1-216-378-11	METAL OXIDE	5.6	5%	2W
R183	1-216-480-11	METAL OXIDE	820	5%	3W
					(E710, E810)
R184	1-216-480-11	METAL OXIDE	820	5%	3W
R185	1-249-429-11	CARBON	10K	5%	1/4W

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* A-6782-847-A RP-199 BOARD, COMPLETE (E510)
* A-6782-860-A RP-199 BOARD, COMPLETE (E710)
* A-6782-835-A RP-199 BOARD, COMPLETE (E810)
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(Ref. No. 1,000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C501	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C502	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C503	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C504	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C505	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C506	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C507	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C508	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C509	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C510	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C511	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C512	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C513	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C514	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C515	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C516	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C517	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C518	1-124-584-00	ELECT	100uF	20%	10V
C519	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C520	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C521	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C522	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C523	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V
C524	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C525	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C526	1-124-584-00	ELECT	100uF	20%	10V
C527	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C528	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C529	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C530	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C531	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C760	1-163-031-11	CERAMIC CHIP	0.01uF		50V
					(E710, E810)
C761	1-124-584-00	ELECT	100uF	20%	10V
					(E710, E810)
C762	1-163-031-11	CERAMIC CHIP	0.01uF		50V
					(E710, E810)
C763	1-163-038-91	CERAMIC CHIP	0.1uF		25V
					(E710, E810)
C764	1-124-257-00	ELECT	2.2uF	20%	50V
					(E710, E810)
C765	1-163-031-11	CERAMIC CHIP	0.01uF		50V
					(E710, E810)
C767	1-163-031-11	CERAMIC CHIP	0.01uF		50V
					(E710, E810)
C768	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
					(E710, E810)
C769	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
					(E710, E810)
C770	1-163-038-91	CERAMIC CHIP	0.1uF		25V
					(E710, E810)
C773	1-163-031-11	CERAMIC CHIP	0.01uF		50V
					(E710, E810)
C774	1-163-031-11	CERAMIC CHIP	0.01uF		50V
					(E710, E810)
C775	1-126-160-11	ELECT	1uF	20%	50V
					(E710, E810)
C776	1-163-031-11	CERAMIC CHIP	0.01uF		50V
					(E710, E810)
C902	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C903	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C906	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C907	1-126-967-11	ELECT	47uF	20%	16V
C908	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C909	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C910	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C911	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C913	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C914	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C941	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C943	1-126-967-11	ELECT	47uF	20%	16V
C946	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C947	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C948	1-163-031-11	CERAMIC CHIP	0.01uF		50V

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

RP-199

Ref. No.	Part No.	Description			Remark
C949	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C950	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C951	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C952	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C953	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C961	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C962	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C971	1-126-967-11	ELECT	47uF	20%	16V
C972	1-163-038-91	CERAMIC CHIP	0.1uF		25V

< CONNECTOR >

Ref. No.	Part No.	Description
CN501	1-563-585-11	CONNECTOR, FLEXIBLE 8P (E510)
CN501	1-766-986-11	CONNECTOR, FFC/FPC 13P (E710, E810)
* CN502	1-564-029-00	PIN, CONNECTOR 4P
CN503	1-766-720-11	CONNECTOR, BOARD TO BOARD 17P
CN701	1-766-724-11	CONNECTOR, BOARD TO BOAR 7P

< DIODE >

Ref. No.	Part No.	Description	
D901	8-719-800-76	DIODE	1SS226

< IC >

Ref. No.	Part No.	Description		Remark
IC501	8-759-352-17	IC	HA118195NT	
IC760	8-759-055-49	IC	AN3327K	(E710, E810)
IC941	8-759-352-18	IC	M52374SP	
IC971	8-759-097-80	IC	HD49783FP	

< JUMPER RESISTOR >

Ref. No.	Part No.	Description			Remark
JR502	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W
JR503	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W
JR504	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W
JR505	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W
JR506	1-216-296-91	CONDUCTOR, CHIP	0	5%	1/8W
JR507	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W
JR508	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W
JR509	1-216-295-91	CONDUCTOR, CHIP	0	5%	1/10W

< COIL >

Ref. No.	Part No.	Description		Remark
L501	1-414-189-31	INDUCTOR	100uH	
L502	1-414-189-31	INDUCTOR	100uH	
L503	1-410-525-11	INDUCTOR	220uH	
L504	1-410-519-11	INDUCTOR	68uH	
L760	1-414-189-31	INDUCTOR	100uH	(E710, E810)
L901	1-414-189-31	INDUCTOR	100uH	
L903	1-410-508-11	INDUCTOR	8.2uH	
L905	1-408-096-00	INDUCTOR	470uH	
L941	1-414-189-31	INDUCTOR	100uH	
L944	1-410-518-41	INDUCTOR	56uH	
L971	1-414-189-31	INDUCTOR	100uH	

< TRANSISTOR >

Ref. No.	Part No.	Description	
Q501	8-729-271-21	TRANSISTOR	2SC2712-Y
Q502	8-729-216-21	TRANSISTOR	2SA1162-Y
Q503	8-729-901-01	TRANSISTOR	DTC144EK
Q901	8-729-271-21	TRANSISTOR	2SC2712-Y
Q904	8-729-216-21	TRANSISTOR	2SA1162-Y
Q905	8-729-271-21	TRANSISTOR	2SC2712-Y
Q942	8-729-271-21	TRANSISTOR	2SC2712-Y
Q961	8-729-271-21	TRANSISTOR	2SC2712-Y

< RESISTOR >

Ref. No.	Part No.	Description			Remark
R501	1-216-033-00	METAL CHIP	220	5%	1/10W (E510, E810)
R501	1-216-035-00	METAL CHIP	270	5%	1/10W (E710)
R502	1-216-033-00	METAL CHIP	220	5%	1/10W (E510, E810)
R502	1-216-035-00	METAL CHIP	270	5%	1/10W (E710)
R503	1-216-295-91	METAL CHIP	0	5%	1/10W
R504	1-216-295-91	METAL CHIP	0	5%	1/10W
R505	1-216-295-91	METAL CHIP	0	5%	1/10W
R506	1-216-295-91	METAL CHIP	0	5%	1/10W
R507	1-216-053-00	METAL CHIP	1.5K	5%	1/10W (E710, E810)
R507	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (E510)
R508	1-216-073-00	METAL CHIP	10K	5%	1/10W
R509	1-216-075-00	METAL CHIP	12K	5%	1/10W
R510	1-216-081-00	METAL CHIP	22K	5%	1/10W
R511	1-216-081-00	METAL CHIP	22K	5%	1/10W
R512	1-216-224-91	METAL GLAZE	12K	5%	1/8W
R513	1-216-081-00	METAL CHIP	22K	5%	1/10W
R514	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R515	1-216-081-00	METAL CHIP	22K	5%	1/10W
R516	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R517	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R518	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R519	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R520	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R762	1-216-035-00	METAL CHIP	270	5%	1/10W (E710, E810)
R763	1-216-067-00	METAL CHIP	5.6K	5%	1/10W (E710, E810)
R765	1-216-033-00	METAL CHIP	220	5%	1/10W (E710, E810)
R766	1-249-418-11	CARBON	1.2K	5%	1/4W F (E710, E810)
R767	1-216-035-00	METAL CHIP	270	5%	1/10W (E710, E810)

Ref. No.	Part No.	Description			Remark
R768	1-216-097-91	METAL GLAZE	100K	5%	1/10W (E710, E810)
R771	1-216-079-00	METAL CHIP	18K	5%	1/10W (E710, E810)
R776	1-216-073-00	METAL CHIP	10K	5%	1/10W (E710, E810)
R901	1-216-045-00	METAL CHIP	680	5%	1/10W
R902	1-216-077-00	METAL CHIP	15K	5%	1/10W
R903	1-216-075-00	METAL CHIP	12K	5%	1/10W
R904	1-216-037-00	METAL CHIP	330	5%	1/10W
R905	1-216-295-91	METAL CHIP	0	5%	1/10W
R906	1-216-033-00	METAL CHIP	220	5%	1/10W
R910	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R911	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R912	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R913	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R914	1-216-031-00	METAL CHIP	180	5%	1/10W
R916	1-216-295-91	METAL CHIP	0	5%	1/10W
R917	1-216-029-00	METAL CHIP	150	5%	1/10W
R918	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R919	1-216-045-00	METAL CHIP	680	5%	1/10W
R920	1-216-075-00	METAL CHIP	12K	5%	1/10W
R921	1-216-077-00	METAL CHIP	15K	5%	1/10W
R932	1-216-295-91	METAL CHIP	0	5%	1/10W
R942	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R943	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R946	1-216-075-00	METAL CHIP	12K	5%	1/10W
R947	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R952	1-216-081-00	METAL CHIP	22K	5%	1/10W
R961	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R962	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R963	1-216-085-00	METAL CHIP	33K	5%	1/10W
R964	1-216-081-00	METAL CHIP	22K	5%	1/10W
R965	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R971	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R972	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R973	1-216-069-00	METAL CHIP	6.8K	5%	1/10W (E710, E810)
R974	1-216-077-00	METAL CHIP	15K	5%	1/10W
R975	1-249-424-11	CARBON	3.9K	5%	1/4W
R976	1-216-069-00	METAL CHIP	6.8K	5%	1/10W (E710, E810)
R977	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R978	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R979	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R980	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R981	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R982	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R983	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R984	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R985	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R986	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R987	1-216-077-00	METAL CHIP	15K	5%	1/10W
R988	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R989	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R990	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R991	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R992	1-216-069-00	METAL CHIP	6.8K	5%	1/10W

MISCELLANEOUS

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Ref. No.	Part No.	Description
13	1-776-227-11	CABLE, FLAT (FMM-13) 7P
55	1-473-518-31	SWITCH BLOCK, CONTROL (E810EE/NP/UX/VC)
55	1-473-518-41	SWITCH BLOCK, CONTROL (E810B/BZ)
55	1-473-518-51	SWITCH BLOCK, CONTROL (E510)
72	1-776-227-11	CABLE, FLAT (FMM-13) 7P
103	1-776-228-11	CABLE, FLAT (FDL-1) 10P (E810)
107	1-776-225-11	CABLE, FLAT (FMH-9) 15P
152	1-500-144-11	HEAD, FE
162	A-6736-103-A	ACE BLOCK ASSY
164	1-506-485-11	PIN, CONNECTOR 6P
220	8-848-662-02	DRUM ASSY, ROTARY UPPER (DZR-66-R) (E710, E810)
221	8-848-666-11	DRUM ASSY, LOWER (DZL-51/J-RP) (E710, E810)
223	8-848-682-11	DRUM ASSY (DZH-74B/Q-RP) (E510)
268	1-762-076-11	SWITCH, ROTARY
M902	1-698-409-11	MOTOR, DC SCV-0801A/Z-NP (CAPSTAN)
M903	X-3943-883-1	MOTOR ASSY, CAM
S410	1-572-662-12	SWITCH, ROTARY (DUAL MODE SHUTTLE)

ACCESSORIES & PACKING MATERIALS

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Ref. No.	Part No.	Description
	1-473-450-11	REMOTE COMMANDER (RMT-V187) (E810EE/NP/VC)
	1-473-450-21	REMOTE COMMANDER (RMT-V187A) (E810B/BZ)
	1-473-486-21	REMOTE COMMANDER (RMT-V185A) (E810UX)
	1-473-487-41	REMOTE COMMANDER (RMT-V186C) (E510EE/VC1/VC2)
	1-473-487-51	REMOTE COMMANDER (RMT-V186D) (E710NC/NP/VC/VP)
	1-473-487-61	REMOTE COMMANDER (RMT-V186E) (E710EX/UX)
	1-473-487-71	REMOTE COMMANDER (RMT-V186F) (E710B)
⚠	1-575-131-11	CORD, POWER (EXCEPT E710UX, E810UX)

The components identified by
mark ⚠ or dotted line with mark
⚠ are critical for safety.
Replace only with part number
specified.

Ref. No.	Part No.	Description	Remark
⚠	1-590-865-22	CORD, POWER (E710UX, E810UX)	
	1-696-593-11	CORD, CONNECTION (PAL) (ANT)	
	1-696-861-11	CORD, CONNECTION (AUDIO OUT) (E710, E810)	
⚠	1-770-321-11	ADAPTOR, CONVERSION 6P (E810EE)	
⚠	1-770-321-21	ADAPTOR, CONVERSION 4P (E510EE)	
	3-708-817-01	COVER, BATTERY(EXCEPT E810B/BZ/EE/NP/VC)	
	3-709-048-31	COVER, REMOTE CONTROL SLUDE (E810B/BZ/EE/NP/VC)	
	3-709-051-01	COVER, REMOTE CONTROL (V187) (E810EE/NP/NC)	
	3-709-051-11	COVER, REMOTE CONTROL (V187A) (E810B/BZ)	
	3-810-400-11	MANUAL, INSTRUCTION (ENGLISH) (E810UX)	
	3-810-400-21	MANUAL, INSTRUCTION (FRENCH) (E810NP/VC)	
	3-810-400-31	MANUAL, INSTRUCTION (GERMAN) (E810NP/VC)	
	3-810-400-41	MANUAL, INSTRUCTION (FRENCH) (E810B/BZ)	
	3-810-400-51	MANUAL, INSTRUCTION (DUTCH) (E810NP/VC)	
	3-810-400-61	MANUAL, INSTRUCTION (ITALIAN) (E810VC)	
	3-810-400-71	MANUAL, INSTRUCTION (SPANISH) (E810NP)	
	3-810-400-81	MANUAL, INSTRUCTION (PORTUGUESE) (E810NP)	
	3-810-401-11	MANUAL, INSTRUCTION (ENGLISH) (E810EE)	
	3-810-401-21	MANUAL, INSTRUCTION (CZECK) (E810EE)	
	3-810-401-31	MANUAL, INSTRUCTION (POLISH) (E810EE)	
	3-810-401-41	MANUAL, INSTRUCTION (RUSSIAN) (E810EE)	
	3-810-401-51	MANUAL, INSTRUCTION (DANISH, SWEDISH, FINNISH) (E810NP)	
	3-810-402-11	MANUAL, INSTRUCTION (ENGLISH) (E710EX/UX)	
	3-810-402-21	MANUAL, INSTRUCTION (FRENCH) (E710NP/NC)	
	3-810-402-31	MANUAL, INSTRUCTION (GERMAN) (E710NC/VC/VP)	
	3-810-402-41	MANUAL, INSTRUCTION (FRENCH) (E710B)	
	3-810-402-51	MANUAL, INSTRUCTION (DUTCH) (E710NC/VP)	
	3-810-402-61	MANUAL, INSTRUCTION (ITALIAN) (E710VP)	
	3-810-402-71	MANUAL, INSTRUCTION (SPANISH) (E710NP)	
	3-810-402-81	MANUAL, INSTRUCTION (PORTUGUESE) (E710NP)	
	3-810-402-91	MANUAL, INSTRUCTION (SWEDISH, DANISH, FINNISH) (E710NC)	
	3-810-404-11	MANUAL, INSTRUCTION (FRENCH) (E510VC1)	
	3-810-404-21	MANUAL, INSTRUCTION (GERMAN) (E510VC1)	
	3-810-404-31	MANUAL, INSTRUCTION (DUTCH) (E510VC1)	
	3-810-404-41	MANUAL, INSTRUCTION (ITALIAN) (E510VC1)	
	3-810-404-51	MANUAL, INSTRUCTION (SPANISH) (E510VC2)	
	3-810-404-61	MANUAL, INSTRUCTION (PORTUGUESE) (E510VC2)	
	3-810-404-71	MANUAL, INSTRUCTION (DANISH, SWEDISH, FINNISH) (E510VC2)	
	3-810-405-11	MANUAL, INSTRUCTION (ENGLISH) (E510EE)	
	3-810-405-21	MANUAL, INSTRUCTION (CZECK) (E510EE)	
	3-810-405-31	MANUAL, INSTRUCTION (POLISH) (E510EE)	

Ref. No.	Part No.	Description	Remark
	3-810-405-41	MANUAL, INSTRUCTION (RUSSIAN) (E510EE)	
*	3-948-574-01	SHEET (ROLL), PROTECTION	
	3-957-513-11	RING, SHUTTLE (EXCEPT E810B/BZ/EE/NP/VC)	
	3-957-513-51	RING, SHUTTLE (E810B/BZ/EE/NP/VC)	
*	3-967-325-01	CUSHION (E510, E810)	
*	3-967-333-01	CUSHION (E710)	
*	3-967-571-01	INDIVIDUAL CARTON (E510VC1/VC2)	
*	3-967-571-11	INDIVIDUAL CARTON (E510EE)	
*	3-967-572-01	INDIVIDUAL CARTON (E710NC/NP/VC/VP)	
*	3-967-572-11	INDIVIDUAL CARTON (E710B)	
*	3-967-572-21	INDIVIDUAL CARTON (E710EX/UX)	
*	3-967-573-01	INDIVIDUAL CARTON (E810NP/VC)	
*	3-967-573-11	INDIVIDUAL CARTON (E810EE)	
*	3-967-573-21	INDIVIDUAL CARTON (E810B/BZ)	
*	3-967-573-31	INDIVIDUAL CARTON (E810UX)	
	X-3944-446-2	BUTTON ASSY (C) (EXCEPT E710B, E810B/BZ/EE/NP/VC)	
	X-3944-557-2	BUTTON ASSY (C) (E710B)	
	X-3945-558-2	BUTTON ASSY (E) (E810B/BZ/EE/NP/VC)	

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HARDWARE LIST

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#1	7-685-648-79	SCREW +BVTP 3X12 TYPE2
#2	7-685-646-79	SCREW (3X8)
#3	7-682-547-04	SCREW +P 3X6
#4	7-624-190-61	STOP RING 2.4, TYPE-CS
#5	7-624-106-04	STOP RING 3.0, TYPE-E
#6	7-682-645-01	SCREW +PS 3X4
#7	7-621-772-08	SCREW +B 2X3
#8	7-628-254-10	SCREW +PS 2.6X6

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

SECTION 6
INTERFACE, IC PIN FUNCTION DESCRIPTION

6-1. SYSTEM CONTROL – VIDEO BLOCK INTERFACE (MA-253 BOARD IC201)

Signal	Pin No.	I/O	STOP FF/ REW	TAPE THREAD-ING	TAPE UNTHREAD-ING	PB	PB • PAUSE	SLOW	×2	CUE	REVIEW	REC	REC • PAUSE
V $\overline{\text{PB}}$	MA-253 IC201(98)	O	H	H	H	L	L	L	L	L	L	H	H
RF SWP (SW30)	MA-253 IC201①	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
QVD	MA-253 IC201②	O	L	L	L	*2	*3	*3	*3	*3	*3	L	L
NA $\overline{\text{SP}}$	MA-253 IC201(94)	O	*4	*4	*4	*5	*5	*5	*5	*5	*5	*4	*4
$\overline{\text{SP}}$/EP/EP	MA-253 IC201⑫	O	*8	*8	*8	*5	*5	*5	*5	*5	*5	*8	*8
V SYNC	MA-253 IC201(96)	I	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6
REC CTL	MA-253 IC201⑦	O	L	L	L	L	L	L	L	L	L	H	L
BLUE BACK ON	MA-253 IC201㉑	O	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7
JOG	MA-253 IC201(97)	O	L	L	L	L	H	H	L	L	L	L	L
ORC SETTEI	MA-253 IC201(91)	O	L	L	L	L	L	L	L	L	L	*9	*9
$\overline{\text{NTSC}}$	MA-253 IC201⑥	O	L	L	L	L	L	L	L	L	L	L	L

*1. Synchronized with drum rotation. 30 Hz 50% duty pulse.
*2. Normally "L". "H" when CTL signal is not generated.
*3. V period "H" pulse.
*4. Selected by REC mode. SP mode: "L"
*5. Selected by tape recording mode.
*6. Composite Sync signal (positive).
*7. "H" when menu screen or blue back screen.
*8. Selected by REC mode: "H" LP mode.
*9. "H" during APC measurement.

Signal \ Mode	SP	LP	EP
SP (93)	L	H	H
$\overline{\text{SP}}$/LP/EP ⑫	L	L	H

6-2. SYSTEM CONTROL – SERVO PERIPHERAL CIRCUIT INTERFACE (MA-253 BOARD IC201)

Signal	Pin No.	I/O	STOP	FF	REW	TAPE THREAD -ING	TAPE UNTHREAD -ING	PB	PB • PAUSE	SLOW	CUE	×2	REVIEW	REC	REC • PAUSE	PB INDEX WRT/ERS
REC CTL	MA-253 IC201⑦	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	
$\overline{\text{CAP STOP}}$	MA-253 IC201㉟	O (O.D)	L	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	L	*3	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	
STEP PLS	MA-253 IC201(99)	O	L	L	L	L	L	L	L	*2	L	L	L	L	L	
CTL REC	MA-253 IC201(75)	O	L	L	L	L	L	L	L	L	L	L	L	H	L	H
CTL-INDEX	MA-253 IC201(79)	O	L	L	L	L	L	L	L	L	L	L	L	L	L	H
$\overline{\text{PB CTL}}$	MA-253 IC201(67)	I	H	*6	*6			*1	H/L	*2	*6	*6	*6	*1	H	
DRM PG	MA-253 IC201(68)	I	*4	*1	*1	*5	*5	*1	*1	*1	*1	*1	*1	*1	*1	
DRM FG	MA-253 IC201(69)	I	*4	*7	*7	*5	*5	*7	*7	*7	*7	*7	*7	*7	*7	
CAP FG	MA-253 IC201(70)	I	H/L	*6	*6	*5	*5	*6	H/L	*2	*6	*6	*6	*6	H/L	
CAP DA	MA-253 IC201(73)	O	*8	*8	*8	*8	*8	*9	*8	*8	*9	*9	*9	*9	*8	
DRM DA	MA-253 IC201(74)	O	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	
CTL STEP	MA-253 IC201(76)	O	L	L	L	L	L	L	L	*11	L	L	L	L	L	

*1. 25 Hz pulse.
*2. Pulse at tape running.
*3. Reverse logic pulse of STEP PLS.
*4. "L" when drum rotation stop.
*5. Unstable period pulse.
*6. Pulse of period in proportion to tape speed.
*7. 300 Hz pulse.
*8. Approx. 2 msec period "H" or "L" pulse.
*9. Approx. 1.5 msec period "H" or "L" pulse.
*10. Approx. 3 msec period "H" or "L" pulse.
*11. "H" when FWD direction STEP drive.

6-3. SYSTEM CONTROL – MECHANISM INTERFACE (MA-253 BOARD IC201)

Signal	Pin No.	I/O	EJECTED	CASSETTE LOADING	CASSETTE UNLOADING	TEPE THREAD-ING	TAPE UNTHREAD -ING	STOP	FF	REW	PB	PB • PAUSE	SLOW	×2	CUE	REVIEW	REC	REC • PAUSE
CAM LOAD	MA-253 IC201⑬	O	L	H	L	H	L	L	L	L	L	L	L	L	L	L	L	L
CAM UNLOAD	MA-253 IC201⑭	O	L	L	H	L	H	L	L	L	L	L	L	L	L	L	L	L
CAM 12V	MA-253 IC201㉛	O		H	L	H	L											
MODE 1	MA-253 IC201㉚	I	H	L	L	*1	*1	H	H	H	H	H	H	H	H	L	H	H
MODE 2	MA-253 IC201㉙	I	L	L	L	*1	*1	L	L	L	H	H	H	H	H	H	H	H
MODE 3	MA-253 IC201㉘	I	L	L	L	*1	*1	H	H	H	L	H	H	L	L	H	L	H
MODE 4	MA-253 IC201㉗	I	L	H	H	*1	*1	H	L	L	L	L	L	L	L	L	L	L
REC PRF	MA-253 IC201⑮	I	L	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
T REEL FG	MA-253 IC201(64)	I	H/L	H/L	H/L	H/L	H/L	H/L	*3	*3	*3	H/L	*3	*3	*3	*3	*3	H/L
S REEL FG	MA-253 IC201(63)	I	H/L	H/L	H/L	*3	*3	H/L	*3	*3	*3	H/L	*3	*3	*3	*3	*3	H/L
T/E LED	MA-253 IC201㉜	O (O.D)	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4
CAP TRQ 1	MA-253 IC201㉞	O (O.D)											*1					
CAP TRQ 2	MA-253 IC201㉝	O (O.D)										L	*1					L
CAP TRQ 3	MA-253 IC201⑧	O (O.D)							H	H			*1		H	H		
$\overline{\text{CAP STOP}}$	MA-253 IC201㉟	O (O.D)	L	L	L	H	H	L	H	H	H	L	*5	H	H	H	H	L
CAP RVS	MA-253 IC201(72)	O	H			L	H	H/L	L	H	L	L	L/*5	L	L	H	L	L
CAP DA	MA-253 IC201(73)	O																
T SENS	MA-253 IC201(61)	I	*4	*4	*4	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7
S SENS	MA-253 IC201(62)	I	*4	*4	*4	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7

*1. Uncertainty.
*2. "L" when erasing protection tab is bent, "H" when not bent.
*3. Pause of period in proportion to reel rotating speed.
*4. Approx. 2 msec period "H" pulse.
*5. Pulse at tape running.
*6. "L" when tape running and CAP RVS is "H".
*7. Normally "L". 2 msec period "H" pulse when tape top or tape end is detected.

6-4. SYSTEM CONTROL – SYSTEM CONTROL PERIPHERAL CIRCUIT INTERFACE (MA-253 BOARD IC201)

Signal	Pin No.	I/O	I/O level
$\overline{\text{ASURA RESET}}$	MA-253 IC201㊸	I	Normally "H", "L" when service interruption is detected or restored.
$\overline{\text{ASURA CS}}$	MA-253 IC201㊹	I	Chip select signal from timer microprocessor. V period "L" pulse.
S IN 0	MA-253 IC201㊺	I	Serial communication data from timer microprocessor. V period "L" pulse.
S OUT 0	MA-253 IC201㊻	O	Serial communication data to timer microprocessor. V period "L" pulse.
$\overline{\text{S CLK}}$	MA-253 IC201㊼	I	Serial communication clock with timer microprocessor. V period "L" pulse.

6-5. SYSTEM CONTROL – Hi-Fi AUDIO BLOCK INTERFACE (MA-253 BOARD IC201) (SLV-E710/E810)

Signal	Pin No.	I/O	STOP/ FF/ REW	TAPE LOADING	TAPE UNLOADING	PB	PB • PAUSE	SLOW	×2	CUE	REVIEW	REC	REC • PAUSE
AF ENV	MA-253 IC201(59)	I	AF RF envelope signal input terminal for automatic tracking.										
A MUTE	MA-253 IC201(92)	O (O.D)	L	L	L	*1	H	H	H	H	H	L	L
NA REC $\bar{P}$	MA-253 IC201⑪	O	L	L	L	L	L	L	L	L	L	H	L
AF REC $\bar{P}$	MA-253 IC201④	O	L	L	L	L	L	L	L	L	L	H	L
AF SWP	MA-253 IC201⑩	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
$\overline{\text{FULL ERS}}$	MA-253 IC201㊱	O (O.D)	H	H	H	H	H	H	H	H	H	L	H

*1. 25 Hz 50% duty pulse approx. 5 msec delayed from RF SW P.

6-6. SYSTEM CONTROL – NORMAL AUDIO BLOCK INTERFACE (MA-253 BOARD IC201) (SLV-E510)

Signal	Pin No.	I/O	STOP/ FF/ REW	TAPE LOADING	TAPE UNLOADING	PB	PB • PAUSE	SLOW	×2	CUE	REVIEW	REC	REC • PAUSE
NA PB	MA-253 IC201(96)	O	L	L	L	H	H	H	H	H	H	L	L
A MUTE	MA-253 IC201(92)	O (O.D)	L	L	L	*1	H	H	H	H	H	L	L
$\overline{\text{NA SP}}$	MA-253 IC201(94)	O	*2	*2	*2	*3	*3	*3	*3	*3	*2	*2	*2
NA REC $\bar{P}$	MA-253 IC201⑪	O	L	L	L	L	L	L	L	L	L	H	L
FULL ERS	MA-253 IC201㊱	O (O.D)	H	H	H	H	H	H	H	H	H	L	H

*1. 25 Hz 50% duty pulse approx. 5 msec delayed from RF SW P.
*2. Selected by REC mode selector. SP mode: "L".
*3. Selected by tape recording mode. SP mode: "L".

6-7. SYSTEM CONTROL – RF MODULATOR, INPUT SELECTION BLOCK INTERFACE (MA-253 BOARD IC201)

Signal	Pin No.	I/O	I/O level			
			TUNER	LINE 1	LINE 2	LINE 3
LINE 1	MA-253 IC201(83)	O	L	H	L	L
LINE 2	MA-253 IC201(82)	O	L	L	H	L
LINE 3	MA-253 IC201(51)	O	L	L	L	H

6-8. SERVO/SYSTEM CONTROL MICROPROCESSOR PIN FUNCTION (MA-253 BOARD IC201 CXP-87630-009Q)

Pin No.	Pin name	I/O	Function
1	RF SWP	O	RF switching pulse output
2	QVD	O	Quasi VD pulse output
3	QHD ENABLE	O	Quasi HD voltage level control
4	AF REC P	O	"H" output when hi-fi audio REC
5	NTSC	O	"H" PAL "L" when NTSC mode
6	FE ON	O	Flying erase ON/OFF
7	REC CTL	O	REC CTL signal output
8	CAP TRQ3	O	Capstan current control
9	APC2	I	APC control input terminal 2
10	APC1	I	APC control input teminal 1
11	NA REC P	I/O	Normal audio recording mode H: recording mode
12	SP/EP/LP	O	"L" when SP mode "H" when EP/LP mode
13	CAM LOAD	I	Loading motor rotating direction control
14	CAM UNLOAD	I	Loading motor rotating direction control
15	C IN (REC PRF)	I	Erasing protection bab, cassette IN detection input
16	RENTAL	I/O	YNR control
17	NC	O	Not used
18	NC	–	Not used
19	358 NTSC	I	Tuner audio selection signal H: 3.58 XTAL
20	NT JUDGE	I	4.43/3.58 judge input.
21	BLUE BACK ON	O	Not used
22	PAL 60	O	NTSC PB control signal "H" when NTSC PB on pal TV
23	TV/VTR	O	"L" when VTR mode "H" when TV mode Not used
24	AV CONT	O	ON/OFF control
25	MESECAM	I/O	"L" in NT mode
26	CBC ON	O	Cable box control on. Not used
27	MODE 4	I	Mechanism section CAM encoder input
28	MODE 3	I	Mechanism section CAM encoder input
29	MODE 2	I	Mechanism section CAM encoder input
30	MODE 1	I	Mechanism section CAM encoder input
31	CAM 12V	O	CAM motor reference voltage
32	T/E LED	O	T/E LED output
33	CAP TRQ2	O	Capstan current control signal 2 L: FF/REW to STOP
34	CAP TRQ1	O	Capstan current control signal 1 L: SLOW speed down
35	CAP STOP	O	Capstan STOP signal output
36	FULL ERS	O	Full erase control
37	NC	O	Not used
38	NC	O	Not used
39	MP	I	Fixed to L
40	ASURA RESET	I	System reset input
41	VSS	–	GND
42	XTAL	–	System clock 16 MHz
43	EXTAL	–	System clock 16 MHz
44	ASURA CS	I	S/S microcomputer chip select signal
45	S IN 0	I	Serial communication signal
46	S OUT 0	O	Serial communication signal
47	SCLK	O	Serial communication signal
48	NICOL ON	O	Not used
49	F MONO	O	Tuner Audio Select Not used
50	EDIT	O	EDIT control

Pin No.	Pin name	I/O	Function
51	LINE 3 CONT	O	Input selection control signal 3
52	AVSS	–	UNSW GND
53	AVREF	–	AD port reference input UNSW 5V
54	AVDD	–	UNSW 5V
55	APC ERROR	I	APC error input
56	NTPB SW	I	NTSC PB switch
57	DEST2	I	DEW sensor input Not used
58	VA ADJ	I	ADJ mode 0V: SWP Adj 2.5V: HiFi Adj
59	AF ENV	I	Hi-Fi audio playback signal envelope
60	RF ENV	I	Video playback signal envelope
61	T SENS	I	Take up end sensor input
62	S SENS	I	Supply end sensor input
63	S REEL FG	I	S side reel FG input
64	T REEL FG	I	T side reel FG input
65	VDD	I	5V
66	V SYNC	I	Composite sync input
67	PB CTL	I	Playback CTL input
68	DRM PG	I	Drum PG input
69	DRM FG	I	Drum FG input
70	CAP FG	I	Capstan FG input
71	POWER SAVE CONT	O	Power save control signal output
72	CAP RVS	O	Capstan reverse control H when reverse
73	CAP DA	O	Capstan error D/A output
74	DRUM DA	O	Drum PG input
75	CTL RED	O	"H" CTL write
76	CTL STEP	O	CTL amp, STEP operation control
77	VDD	I	5V
78	VDD	O	5V
79	CTL INDEX	O	CTL INDEX signal input
80	SO1	I/O	Signal for serial communication
81	SCLK1	I/O	Signal for serial communication
82	LINE 2 CONT	I	Input selection control signal 2
83	LINE 1 CONT	O	Input selection control signal
84	APC PWM	O	PWM output for APC
85	NC	I	Not used
86	NC	–	Not used
87	NC	–	Not used
88	VSS	–	GND
89	VDD	–	5V
90	NC		Not used
91	ORC SETTEI	O	H when ORC measurement
92	A MUTE	O	"H" when audio Mute
93	SP	O	Normal ausio tape speed select
94	NA SP	O	Normal audio tape speed select.
95	NA PB	O	Audio output control signal H when normal audio playback
96	AF REC	O	"H" output when hi-fi audio REC
97	JOG	O	"H" when trick play mode
98	V PB	O	Video system playback mode "L" when playback
99	STEP PLS	O	Step pulse H when capstan step driving
100	AF SWP	O	AF switching pulse output

6-9. TUNER/TIMER MODE CONTROL PIN FUNCTION (MA-253 BOARD IC151)

Pin. No.	Pin Name	I/O	Function
1	$\overline{\text{PDC DAV}}$	I	Line 21H output pulse. Pulse signal synchronized with line 21 of input video signal.
2	$\overline{\text{PAWER FAIL}}$	I	Power failure detect signal input.
3	H DET	I	Video signal detect signal input
4	SIRCS IN	I	SIRCS signal input
5	EEP BUSY	I	EEP Busy signal input
6	SIRCS OUT	O	SIRCS signal output
7	BUZZER	O	Buzzer output
8	$\overline{\text{STEREO}}$	I	Tuner audio mode input (stereo)
9	EEP $\overline{\text{RST}}$	O	EEP ROM reset signal output (stereo)
10	SCK0	O	Clock for serial communication
11	SI0	I	Serial data input
12	SO0	O	Serial data output
13	EEP $\overline{\text{CS}}$	O	EEP ROM chip select signal output
14	LANC IN	I	LANC input
15	LANC OUT	O	LANC output
16	A/D0	I	Key reading A/D input
17	A/D1	I	Key reading A/D input
18	A/D2	I	Key reading A/D input
19	A/D3	I	Key reading A/D input
20	A/D4	I	Key reading A/D input
21	A/D5	I	Key reading A/D input
22	A/D6	I	Key reading A/D input
23	AFT	I	Key reading A/D input
24	AVDD	–	UNSW 5V
25	AV REF	–	AD port reference input UNSW 5V
26	SCL0	O	I^2C BUS (clock)
27	CG $\overline{\text{CS}}$	O	Character generator chip select signal
28	SDA0	O	I^2C BUS (data)
29	LED $\overline{\text{CS}}$	O	LED driver chip select signal
30	AVSS	–	UNSW GND
31	EXTAL	–	System clock
32	XTAL	–	
33	VSS	–	GND
34	$\overline{\text{RST}}$	I	Reset signal in
35	PLL CLK	O	Tuner clock signal
36	PLL DATA	O	Tuner data signal
37	PLL ENABLE	O	Tuner enable signal
38	C+DATA	O	CANAL+ control data
39	C+DET	I	CANAL+ detection
40	C+CLK	O	CANAL+ control
41	TA MUTE	O	Tuner audio mute control signal
42	AUTO PRESET	O	"H" during auto preset
43	VFDP	–	–30V
44-62	SEG 1-19	O	LCD segment output
63	N.C.	–	Not used
64	N.C.	–	Not used
65	N.C.	–	Not used
66-71	GRID 6-1	O	LCD grid output
72	VDD	–	UNSW 5V
73	TX	–	Connected to oscillator for clock
74	TEX	–	
75	NC/VPP	–	Connect to +5 V
76	ASURA $\overline{\text{CS}}$	O	S/S microcomputer chip select
77	$\overline{\text{SYS RESET}}$	O	System reset signal output
78	POWER CONT 1	O	Power supply control signal output
79	POWER CONT 2	O	Power supply control signal output for EDS
80	CG V	I	Vertical sync. signal input

SECTION 7
ADJUSTMENTS

During the adjustment, see the Parts Arrangement Diagram for Adjustment on page 7-10.

7-1. MECHANICAL ADJUSTMENTS

Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENT IV.

7-2. ELECTRICAL ADJUSTMENTS

2-1. PRE-ADJUSTMENT PREPARATIONS

Necessary items and indications for total adjustment of electric circuit of this machine will be described in this chapter.

2-1-1. Instruments to be Used.

1) Color TV
2) Oscilloscope 1or 2 phenomena, band more than 30 MHz, deley mode, as provided.
3) Frequency counter (min. 8 digits)
4) PAL pattern generator
5) Digital voltmeter
6) Audio level meter
7) Audio generator
8) Modulation Analyzer
9) Distortion factor meter
10) Attenuator
11) Alignmeter tape
    Part Code: H-7099-052-H (MH-2)
13) Extension cable
    RP-199 board CN501 ↔ Drum Head flexible

2-1-2. Connection

Unless otherwise specified, connect and adjust the measuring instruments as shown in the following diagram.

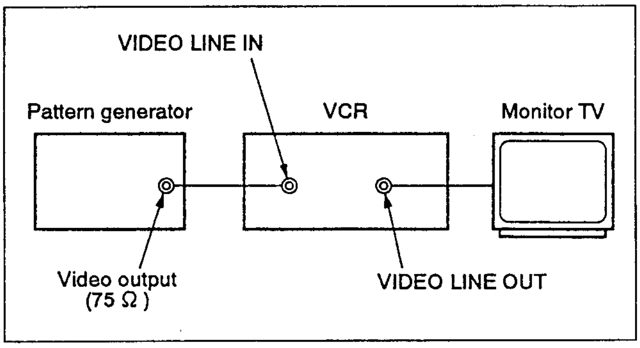

VIDEO LINE IN
Pattern generator
VCR
Monitor TV
Video output
(75 Ω)
VIDEO LINE OUT

Fig. 7-2-1

2-1-3. Set-up of Adjutment

In this adjustment, PAL pattern generator is connected with LINE input signal terminal. When check to tuner, connected AERIAL terminal. Check that the amplitudes of video signal PAL signal, of picture portions, and of burst signals are flat at approximately 0.3, 0.7 and 0.3 V, respectively, and that the level ratio of the burst signal and "red" signal are 0.30: 0.66. Fig. 7-2-2. shows video signals (color bars) used in adjusting the video section.

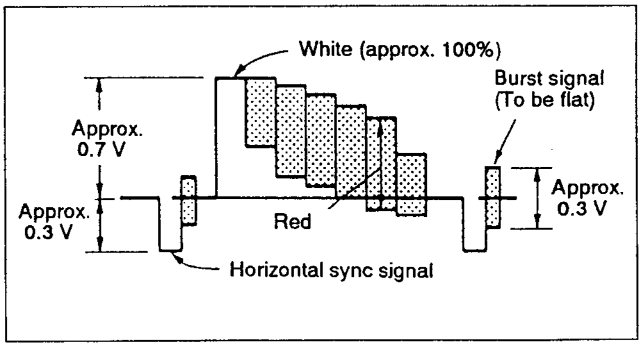

White (approx. 100%)
Burst signal
(To be flat)
Approx.
0.7 V
Approx.
0.3 V
Approx.
0.3 V
Red
Horizontal sync signal

Fig. 7-2-2.

2-1-4. Alignment Tape
[Alignment Tape (MH-2)]

	Time	Video signal	Audio signal
1	10 minutes	Stair-step	6 kHz
2	5 minutes	—	3 kHz
3	10 minutes	Color bar	1 kHz
4	3 minutes	RF sweep	—

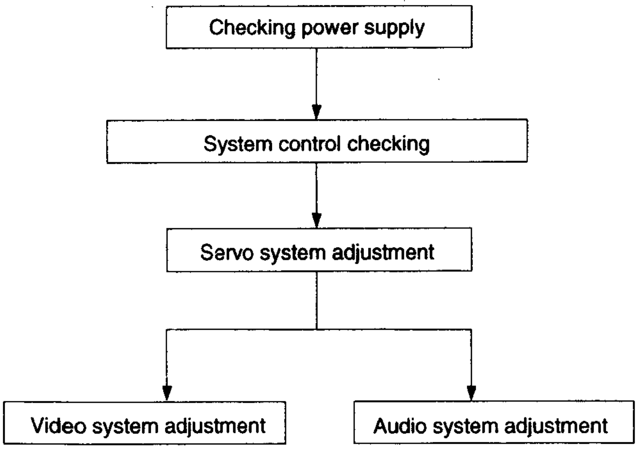
2-1-5. Specified I/O Level and Impedance

Input/output terminal

Video inputs LINE IN : phono jacks
EURO-AV : 21-pin (Pin ⑳) 1 Vp-p, 75Ω, unbalanced, sync negative
Audio inputs LINE IN : phono jacks
47 kΩ, –7.5 dBs (0 dBs = 0.775 Vrms)
EURO-AV : 21-pin (Pin ② and ⑥)
More than 10 kΩ, –4 dBs
Video outputs LINE OUT : phono jack
EURO-AV : 21-pin (Pin ⑲) 1 Vp-p, 75Ω, unbalanced, sync negative
Audio outputs LINE OUT : phono jacks
–7.5 dBs at load impedance 47kΩ
Output impedance : less than 10kΩ
EURO-AV : 21-Pin (Pin ① and ③)
Output impedance : less than 1kΩ
–4dBs with 10 kΩ load

2-1-6. Adjusting Sequence

Make the electrical adjustment in the following sequence.



2-2. POWER SUPPLY CHECK (PS-357 BOARD)

Mode	E-E
Measuring Instrument	Digital voltmeter
+F, –F check	
Measurement Point	Pin ④ (+), ①(–) of CN101
Specified Value	4.3±1Vdc
–30V check	
Measurement Point	Pin ② of , CN101
Specified Value	-30±3Vdc
–8V check	
Measurement Point	Pin ⑤ of CN101
Specified Value	13.5±2Vdc
D6V check	
Measurement Point	Pin ⑥ of CN101
Specified Value	5.9±0.5V
SW12V	
Measurement Point	Pin ⑧ of CN101
Specified Value	12±1Vdc
MTR12V check	
Measurement Point	Pin ⑫ of CN101
Specified Value	12±0.5Vdc
13 V check	
Measurement Point	Pin ⑭ of CN101
Specified Value	13±1Vdc
+38V check	
Measurement Point	Pin ⑯ of CN101
Specified Value	38.0±3Vdc
SW5 V check	
Measurement Point	Pin ⑰ of CN101
Specified Value	5 ±0.5 Vdc

Checking Method:

1) Confirm that each voltage meets its specified value.

2-3. SYSTEM CONTROL CHECK

2-3-1. Clock Check (MA-253 Board)

Purpose:

Adjust to improve the clock precision. When it is out of order, errors gradually increases.

Measurement point	Pin ⑦ of IC151 : MA-253 Board
Measurement Equipment	Frequency counter (Interval counter mode)
Specified Value	0.1249995±0.0000005 sec

Confirmation Method:

1) Connect to the GND from IC151 pin ⑲ through a resistor 22kΩ (1-249-489-00): MA-253 board (The set goes to adjusting mode.)
2) Connect the frequency counter as shown below.
3) Confirm that the oscillation frequency is the specified value.

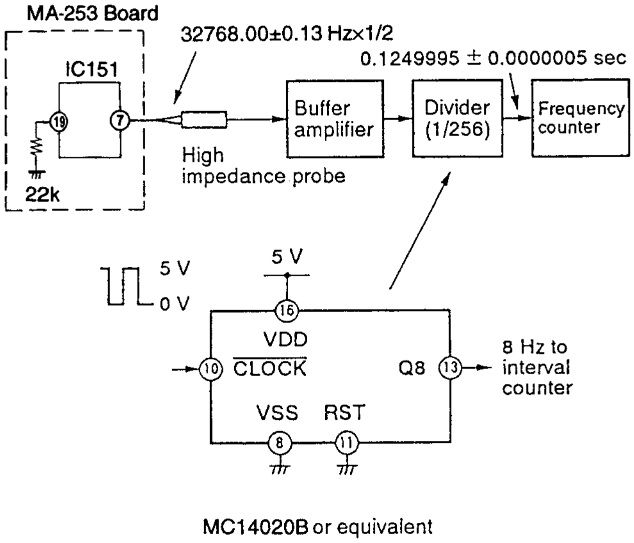

MA-253 Board
IC151
⑲
⑦
22k
32768.00±0.13 Hz×1/2
0.1249995 ± 0.0000005 sec
Buffer amplifier
Divider (1/256)
Frequency counter
High impedance probe
5 V
0 V
5 V
16
VDD
10
CLOCK
Q8
13
8 Hz to interval counter
VSS
RST
8
11
MC14020B or equivalent

Fig. 7-2-3.

2-4. SERVO SYSTEM Adjustment

2-4-1. Switching Position Adjustment (MA-253 Board)

Purpose:

Adjust the interval between A ch and B ch of tape playback output. Improve the interchangeability with other tapes and sets.
When it is out of order, the interval appears on the screen, the screen is disturbed.

Mode	PB
Signal	Alignment tape SP mode color bar
Measurement Point	CH1: VIDEO LINE OUT CH2: Pin ③ of CN502 (RP-199 board) (RF SWP)
Measuring Instrument	Oscilloscope
Specified Value	6.5±0.5H (410±32μsec)

Adjusting Method:

1) Connect IC201 pin (58) to the GND for about 1 second to activate the RF switching position adjustment mode.
2) Using the channel + and – buttons, adjust to 410±32μsec (6.5±0.5H).

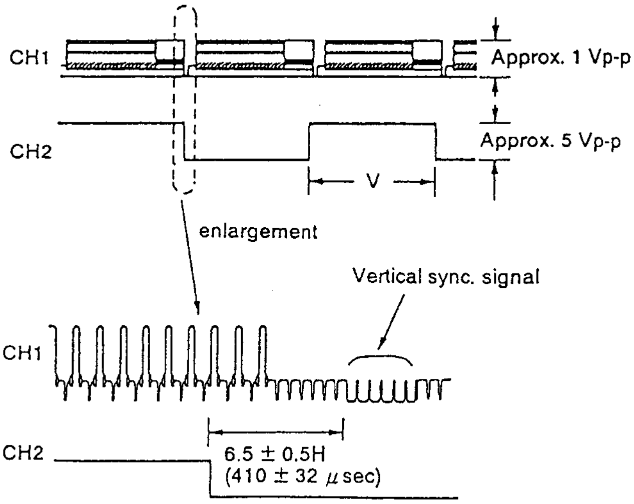

CH1
Approx. 1 Vp-p
CH2
Approx. 5 Vp-p
V
enlargement
Vertical sync. signal
CH1
CH2
6.5 ± 0.5H
(410 ± 32 μsec)

Fig. 7-2-4.

2-5. VIDEO SYSTEM ADJUSTMENT

Adjust the video system in the following sequence as a rule. The color video signal supplied from the pattern generator is used as a video input signal for video system adjustment in the recording mode. Make sure that sync. and color burst signals meet requirements specified at set up of adjustment shown in Fig. 7-2-1.

[Adjustment Sequence]

2-5-1. Recording Y Signal Level Check
2-5-2. White Clip, Dark Clip Check
2-5-3. Playback Y Signal Level Check
2-5-4. Recording Chroma Level Check
2-5-5. Sync. AGC Check
2-5-6. X'tal Oscillation Frequency Check

2-5-1. Recording Y Signal Level Check (MA-253 Board)

Purpose:

Check the brightness signal level after passing through the V/C separating circuit.

Mode	E-E
Signal	Color bar
Measurement point	Emitter of Q352
Measurement equipment	Oscilloscope
Specified value	950±100mVp-p

Confirmation Method:

1) Confirm that the record Y level is 950±100mVp-p.

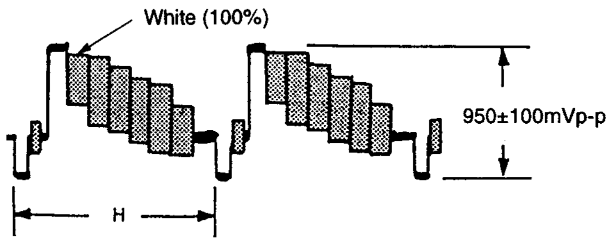


Fig. 7-2-5.

2-5-2. White Clip, Dark Clip Check (MA-253 Board)

Purpose:

Confirm that no overshoot is generated by the pre-emphasis circuit. If shifted, the signals are overmodulated, thus causing a noise in the images.

Mode	E-E
Signal	Color bar
Measurement point	Pin ㉜ of IC301
Measurement equipment	Oscilloscope
Specified value	White clip: 190±15% Dark clip: 52±10%

Confirmation Method:

1) Confirm that the white clip is 190±15%, on condition that the level between white and sync. is 100%.
2) Confirm that the dark clip is 52±10%, on condition that the level between white and sync. is 100%

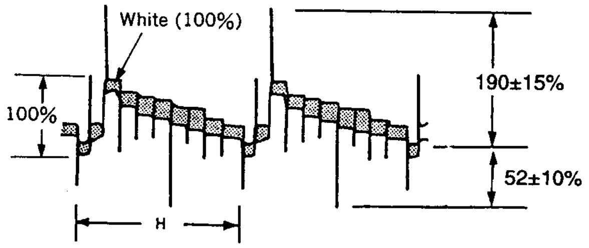


Fig. 7-2-6.

2-5-3. Playback Y Signal Level Check (MA-253 Board)

Purpose:

Confirm that the playback Y signal level is correct.

Mode	PB
Signal	Alignment tape SP color bar
Measurement point	VIDEO LINE OUT
Measurement equipment	Oscilloscope
Specified value	1.97±0.18Vp-p

Note: Make this adjustment with the EDIT switch turned off.

Confirmation Method:

1) Confirm that the play Y level is 1.97±0.18Vp-p.

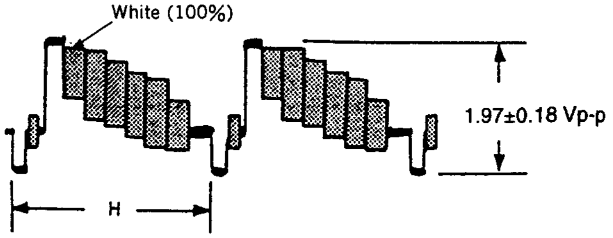


Fig. 7-2-7.

2-5-4. Recording Chroma Level Check (MA-253 Board)

Purpose:

Check the chroma signal level after passing through the Y/C separating circuit.
If shifted, the image is roughened and another color may appear on the edges.

Mode	E-E
Signal	Color bar
Measurement point	Pin ㉚ of IC301
Measurement equipment	Oscilloscope
Specified value	160±23mVp-p

Confirmation Method:

1) Confirm that the record chroma level is 160±23mVp-p.

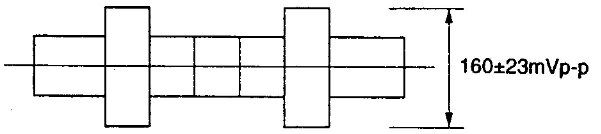


Fig. 7-2-8.

2-5-5. Sync. AGC Check (MA-253 Board)

Purpose:

Confirm that the video level is correct.

Mode	E-E
Signal	Color bar
Measurement point	VIDEO LINE OUT
Measurement equipment	Oscilloscope
Specified value	2.02±0.14Vp-p

Note: Video output terminal must be terminated at 75Ω.

Confirmation Method:

1) Confirm that the sync. AGC level is 2.02±0.14Vp-p.

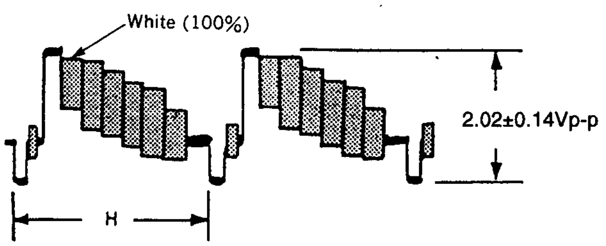


Fig. 7-2-9.

2-5-6. X'tal Oscillation Frequency Check (MA-253)

Purpose:

Confirm that the fsc is correct.

Mode	PB
Signal	Alignment tape SP color bar
Measurement point	Pin ㉒ of IC301
Measurement equipment	Frequency counter, Oscilloscope
Specified value	4,433,619±96Hz

Note: connect the frequency counter through a probe of high input impedance (about 10MΩ) and low capacity (10pF or less).

Confirmation Method:

1) Confirm that the frequency is 4,433,619±96Hz
2) Confirm that the amplitude is 450±200mVp-p.

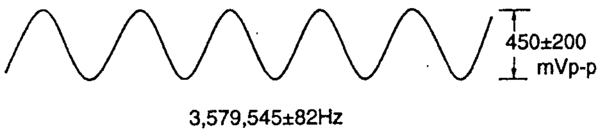


Fig. 7-2-10.

2-6. AUDIO SYSTEM ADJUSTMENTS

- Adjust both Lch and Rch.

[Connection]

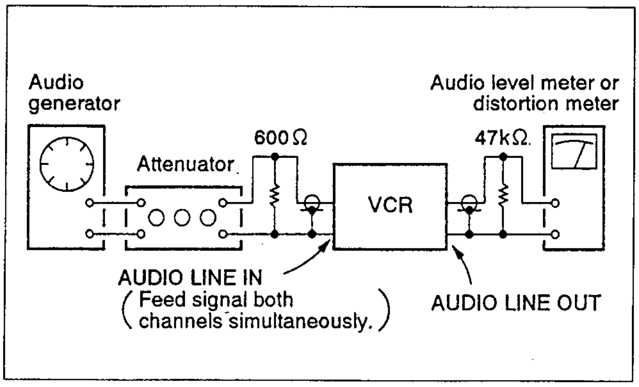

Audio generator
Audio level meter or distortion meter
600Ω
47kΩ
Attenuator
VCR
AUDIO LINE IN
(Feed signal both channels simultaneously.)
AUDIO LINE OUT

Fig. 7-2-11

2-6-1. Hi-Fi Audio System Adjustment

- Set switches and knobs to the following positions to make adjustment unless otherwise specified.
  INPUT SELECT switch .... LINE
  AUDIO MONITOR .... STEREO

[Adjusting Sequence]

1. VCO fo adjustment
2. Deviation check
3. BPF fo adjustment
4. AF switching position

1. VCO fo Adjustment (MA-253 Board)

Purpose:

Adjust to have interchangeability in HiFi audio.
When it is out of order, the sound is distorted.

Mode	REC
Signal	No signal
Measuring Instrument	Frequency counter
1.3 MHz Adjustment	
Measurement Point	Pin ① of CN501 Auto tracking ON (Remote commander)
Adjusting Element	RV521 (R CH)
Specified Value	1.4 MHz ± 1 kHz
1.7 MHz Adjustment	
Measurement Point	Pin ① of CN501 Auto tracking OFF (Remote commander)
Adjusting Element	RV531 (R CH)
Specified Value	1.8 MHz±1kHz

Note: Connect the frequency counter through a probe of high input impedance (more than 1 MΩ) and low capacity (10 pF or less).

Connection:

Connect pin ② and ③ of CN881 with a jumper wire.

Adjusting Method:

1) Connect the frequency counter to pin ① of CN501.
2) Adjust each volume so that each frequency meets its specified value.

2. Deviation Check (MA-253 Board)

Purpose:

Set the HiFi audio signal level to specified value.
Adjust to have interchangeability with other tapes and sets.
When it is out of order, the volume of sound is different on playback.

Mode	REC
Signal	Pin ② (Lch), ① (Rch) of IC501 400Hz -7.5 dBs (920m Vp-p)
Measurement Point	pin ① of CN501 Lch: Auto tracking ON (Remote commander) Rch: Auto tracking OFF (Remote commander)
Measurement Equipment	Modulation analyzer
Specified Value	50±5kHz

Connection:

Connect pin ② and ③ of CN881 with a jumper wire.

3. BPF fo Adjustment (MA-253 Board)

Purpose:

Adjust to separate carrier component precisely and to operate normally the filter for cutting video signal.
When it is out of order, the sound is distorted.

Mode	PB
Signal	1.608 MHz Input 200 mVp-p: Pin ③ of CN501
Measurement point	Pin ① of CN501
Measuring Instrument	Oscilloscope
Adjusting Element	RV541

Note: Talk a trigger from AF SWP (Pin ⑥ of CN501).

Connection:

1) Feed 1.608 MHz, 200 mVp-p sine wave to Pin ③ of CN503.

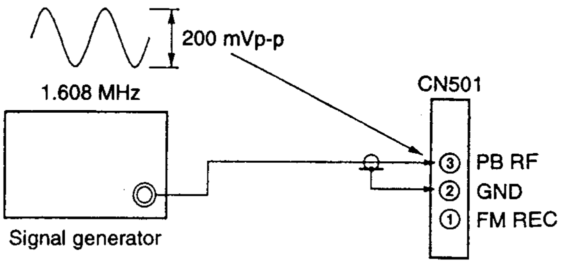
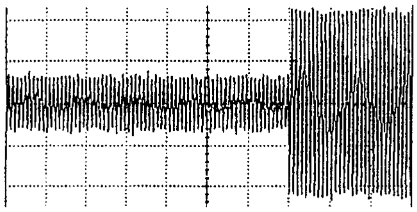


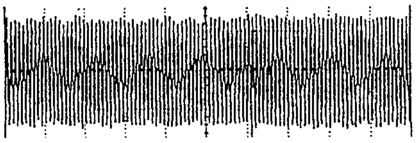
Fig. 7-2-12.

Adjusting method:

1) In the play mode, turn off the auto tracking from the remote controller.
2) Adjust RV541 so that the amplitudes of A and B are on the same level (±2mVp-p).



Disordered condition



Adjusted condition

Fig. 7-2-13

4. AF Switching Position Adjustment (MA-253 Board) (SLV-E710/E810)

Purpose:

Adjust the interval between A CH and B CH of tape playback output. Improve the interchangeability with other tapes and sets.
When it is out of order, noisy sound is increased and big noise is heard.

Mode	PB
Signal	Alignment tape SP mode color bar
Measurement point	CH1: Pin ③ of CN502 (RP-199 Board) CH2: Pin ① of CN501 (MA-253 Board)
Measuring Instrument	Oscilloscope
Specified Value	Fig. 7-2-15

Adjusting method:

1) Connect IC201 pin (58) to the GND for about 1 second to activate the RF switching position adjustment mode.
2) Press the record button to activate the AF switching position adjustment mode.
3) Using the channels + and – buttons, minimize a chipped portion. At this time, confirm that a noisy sound is not heard.

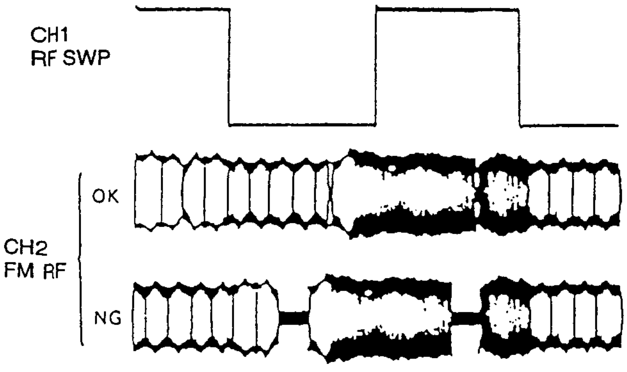


Fig. 7-2-14.

2-6-2. Normal Audio System Adjustment

- Make adjustment in the SP mode, unless otherwise specified. Use a normal VHS cassette for an adjustment tape.
- Set AUDIO MONITOR to normal.

[Adjustment Sequence]

1. **ACE Head Adjustment**
2. **E-E Output Level Check**
3. **Recording Bias Adjustment**
4. **Overall Level Characteristic and Distortion Factor Check**
5. **Overall S/N Check**

1. ACE Head Adjustment

Refer to the service manual of VHS MECHANICAL ADJUSTMENT IV.

2. E-E Output Level Check

Purpose:

Confirm that the output level against the reference input is within the specification.

Mode	E-E
Signal	L, R: 400Hz, –7.5 dBs
Measurement point	Audio output terminal
Measurement equipment	Audio level meter
Specified value	–7.5±2dBs

Confirmation Method:

1) Simultaneously input a signal of 400Hz, –7.5dBs to both L and R channels of Audio Line Input.
2) Confirm that the audio output level is –7.5±2dBs.

3. Recording Bias Check (MA-253 Board)

Purpose:

Confirm that the frequency characteristic is within the specification.

Mode	REC and PB (SP mode)
Signal	400Hz, –27.5 dBs 7kHz, –27.5 dBs
Measurement point	Audio output terminal
Measurement equipment	Audio level meter
Specified value	0+3dB/–6dB

Note: Tape path adjustment must have been completed.

Confirmation Method:

1) Supply a signal of 400 Hz, –27.5 dBs to both L and R channels of Audio Line Input.
2) Connect the audio level meter to the Audio Line Output.
3) Adjust the attenuator so that the audio level meter will indicate –27.5 dBs.
4) Make recording in the SP mode.
5) Set an audio line input signal to 7 kHz and make recording.
6) Playback a recorded portion, and measure output levels at 400 Hz and 7 kHz.
7) Confirm that the 7 kHz playback output level within a range of the 400 Hz playback output level 0+3 dB/–6 dB.

4. Overall Level Characteristic and Distortion Factor Check

Purpose:

Check the record level, play level, and distortion factor against the reference input.

Mode	REC and PB (SP mode)
Signal	400Hz, -7.5 dBs
Measurement point	Audio output terminal
Measurement equipment	Audio level meter and distortion factor meter
Specified value	Playback level: -7.5±3dBs Distortion factor: 4% or less

Confirmation Method:

1) Supply an audio signal of 400Hz, -7.5 dBs simultaneously to both L and R channels of Audio Line Input.
2) Make recording
3) Play back a recorded portion.
4) Confirm that a playback level is -7.5±3dBs.
5) Confirm that a distortion factor is within 4%.

5. Overall S/N Check

Purpose:

Confirm that the S/N is within the specification.

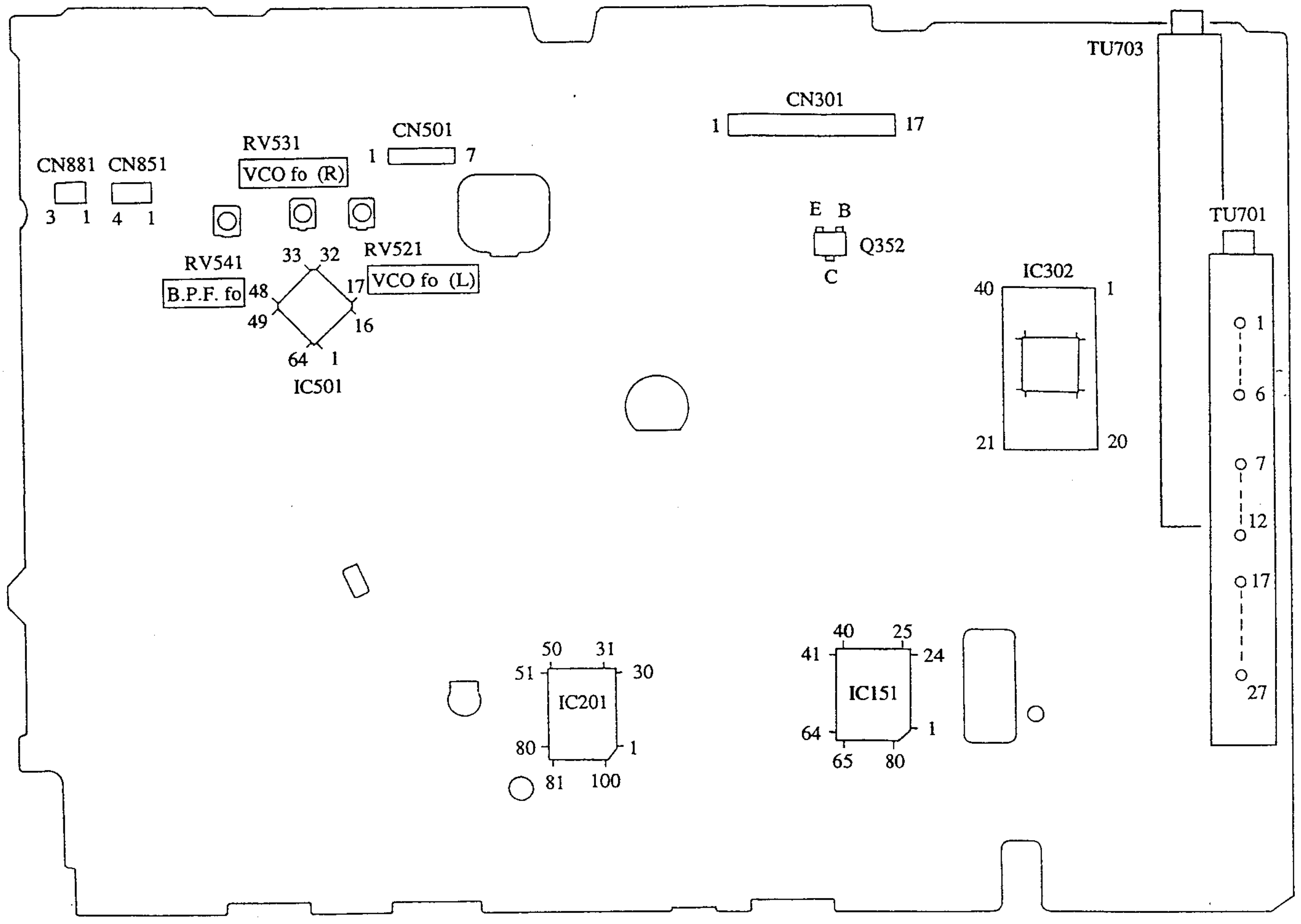
Mode	REC and PB (SP mode)
Signal	No signal
Measurement point	Audio output terminal
Measurement equipment	Audio level meter
Specified value	-46dB or more

Confirmation Method:

1) Connect both L and R channels of audio line input to the GND.
2) Start recording.
3) Play the recorded part to confirm that the noise is below -46dB.

2-7. PARTS ARRANGEMENT DIAGRAM FOR ADJUSTMENTS

MA-253 BOARD (CONDUCTOR SIDE)

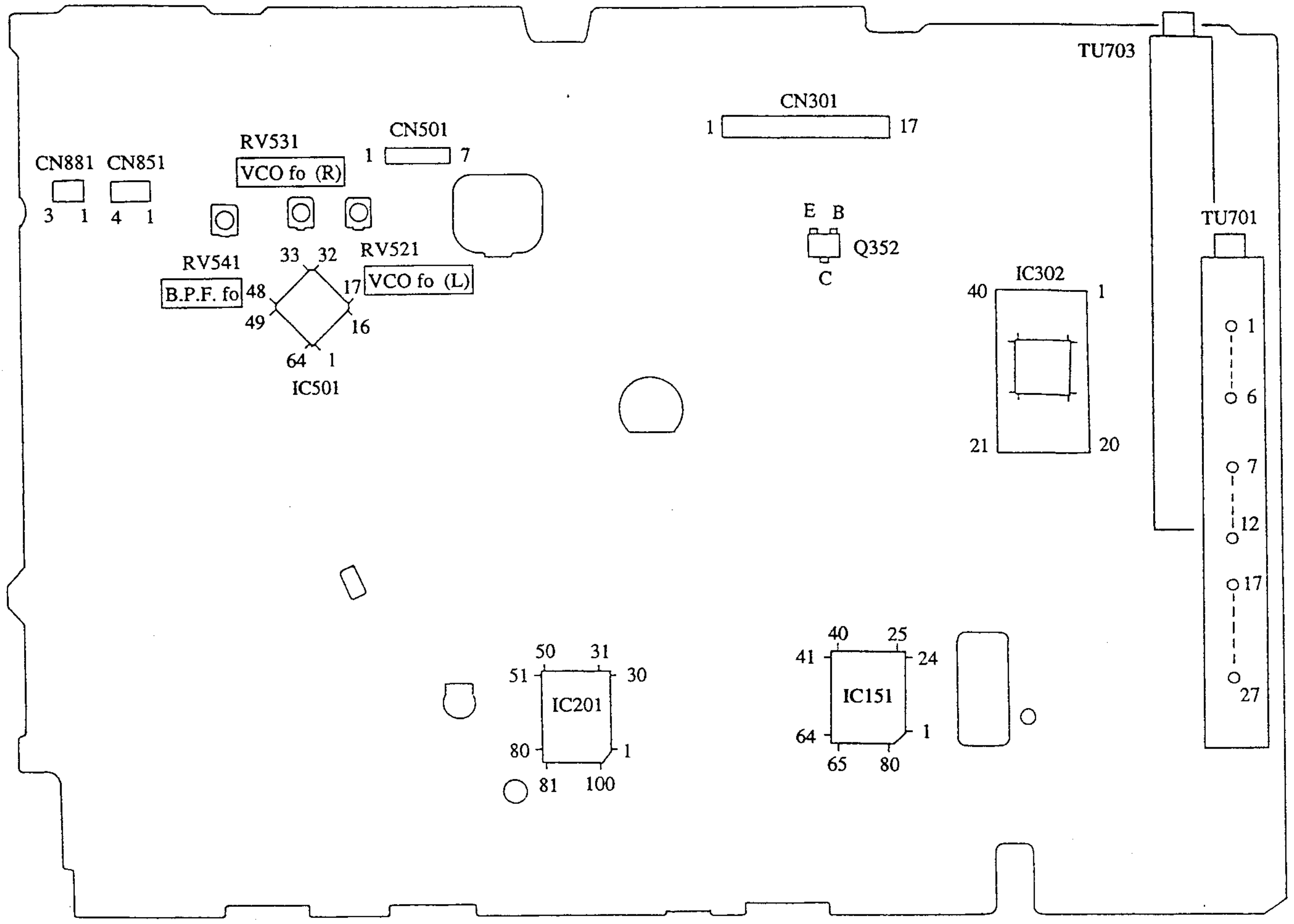

TU703
CN301
1
17
CN501
1
7
RV531
VCO fo (R)
CN881
CN851
3 1
4 1
E B
Q352
C
TU701
RV541
B.P.F. fo
33 32
48
49
17
16
64 1
IC501
RV521
VCO fo (L)
IC302
40
1
21
20
1
6
7
12
17
27
40 25
41
24
IC151
64
1
65 80
50 31
51
30
IC201
80
1
81 100

RP-1

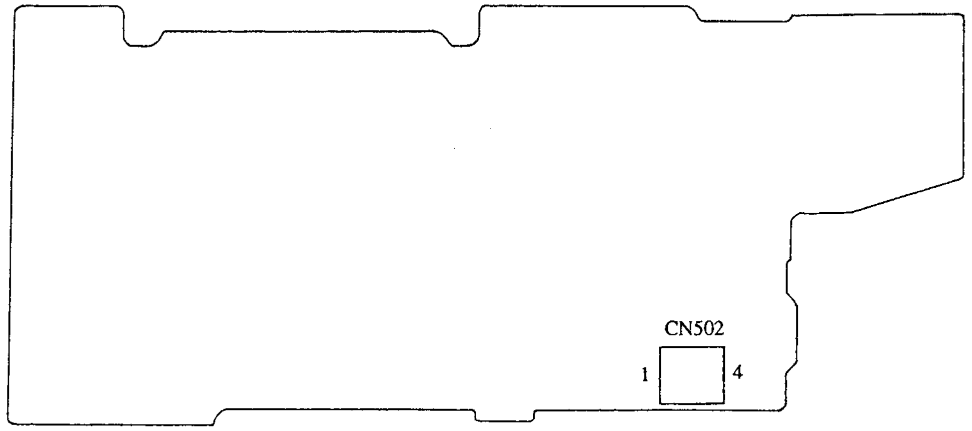
PS-3

2-7. PARTS ARRANGEMENT DIAGRAM FOR ADJUSTMENTS

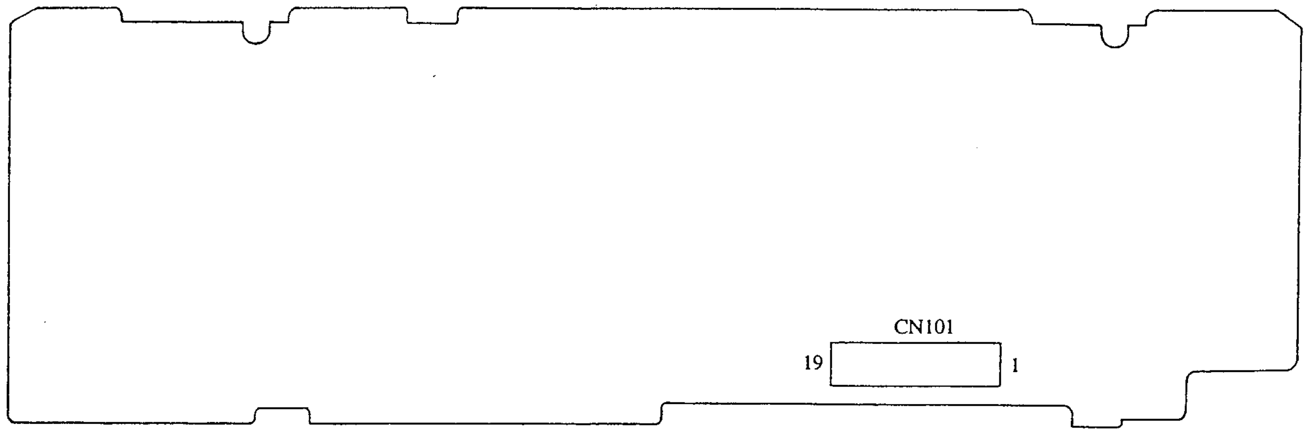
MA-253 BOARD (CONDUCTOR SIDE)


TU703
CN301
1
17
CN501
1
7
RV531
VCO fo (R)
CN881 CN851
3 1 4 1
E B
Q352
C
TU701
RV541
B.P.F. fo
48
49
33 32
RV521
17
VCO fo (L)
16
64 1
IC501
IC302
40
1
21
20
1
6
7
12
17
27
50 31
51
30
IC201
80
1
81 100
40 25
41
24
IC151
64
1
65 80

RP-199 BOARD (COMPONENT SIDE)



PS-357 BOARD (COMPONENT SIDE)



SLV-E510EE/E510VC1/E510VC2/E710B/E710EX/E710NC/E710NP/E710UX/E710VC/E710VP/E810B/E810BZ/E810EE/E810NP/E810UX/E810VC

RMT-V185A/V186C/V186D/V186E/V186F/V187/V187A

SONY®

SERVICE MANUAL

French Model
SLV-E710B/E810B/E810BZ
East European Model
SLV-E510EE/E810EE
Irish Model
SLV-E710EX
North European Model
SLV-E710NC
Spanish Model
SLV-E710NP/E810NP
UK Model
SLV-E710UX/E810UX
German Model
SLV-E510VC1/E510VC2/E710VC/E710VP/E810VC

CORRECTION-1

File this supplement with the service manual.

RF, AF Switching Position Adjustment correct

(96-015)

As the adjustment methods of the RF and AF switching position were mistaked, please correct it.
Please refer to the next page for the correct adjustment method.

Page 7-3

2-4. SERVO SYSTEM Adjustment

2-4-1. Switching Position Adjustment (MA Boards)

Purpose:

Adjust the interval between A ch and B ch of tape playback output. Improve the interchangeability with other tapes and sets. When it is out of order, the interval appears on the screen, the screen is disturbed.

Mode	PB
Signal	Alignment tape SP mode color bar
Measurement Point (Fig. A)	CH1: VIDEO LINE OUT CH2: Pin ③of CN502 (RP boards) (RF SWP)
Measuring Instrument	Oscilloscope
Specified Value	6.5 ± 0.5 H (416 ± 32 μsec)

Adjusting Method:

1) Short circuit the ADJ-MODE land on MA board for about 1 second to activate the RF switching position adjustment mode (Fig. C).
2) Check that "AdJ-rF" is indicated on FL display.

HiFi Model

3) Using the channel + and − button, adjust to 416 ± 32 μsec (6.5 ± 0.5 H).
4) Press the PAUSE button.
5) Press the EJECT button.

MONO Model

3) Press the EJECT button to adjust RF SWP automatically.
4) Check that "AdJ-rF" has disappeared on FL display.
5) Press the EJECT button.

Note: The "AdJ-Err" is displayed if a calculation error occurred during automatic adjustment. In this case, press the STOP button to reset the alarm, then retry adjustment from the beginning.

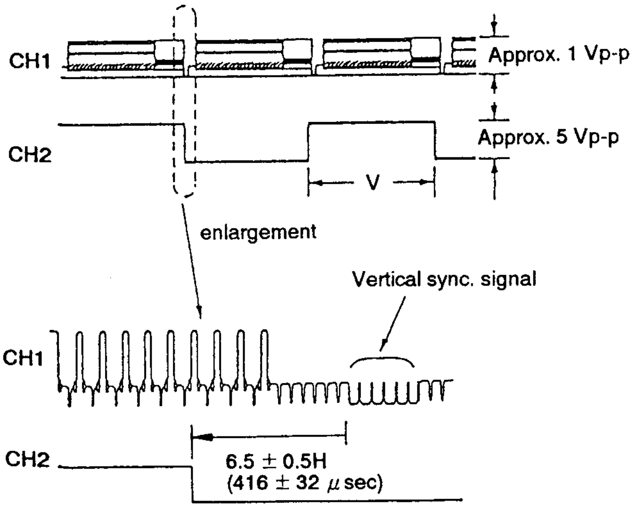


Fig. 7-2-4.

Page 7-7

2-6. AUDIO SYSTEM Adjustment

4. AF Switching Position Adjustment (MA Boards)

Purpose:

Adjust the interval between A CH and B CH of tape playback output. Improve the interchangeability with other tapes and sets. When it is out of order, noisy sound is increased and big noise is heard.

Mode	PB
Signal	Alignment tape SP mode color bar
Measurement Point (Fig. A)	CH1: Pin ③of CN502 (RP boards) CH2: Pin ①of CN701 (JL707) (RP boards)
Measuring Instrument	Oscilloscope
Specified Value	Fig. 7-2-14

Adjusting method:

1) Short circuit the ADJ-MODE land on MA board for about 1 second to activate the RF switching position adjustment mode (Fig. C).
2) Check that "AdJ-rF" is indicated on FL display.
3) Press the REC button to activate the AF switching position adjustment mode.
4) Using the channels + and − buttons, minimize a chipped portion. At this time, confirm that a noisy sound is not heard.

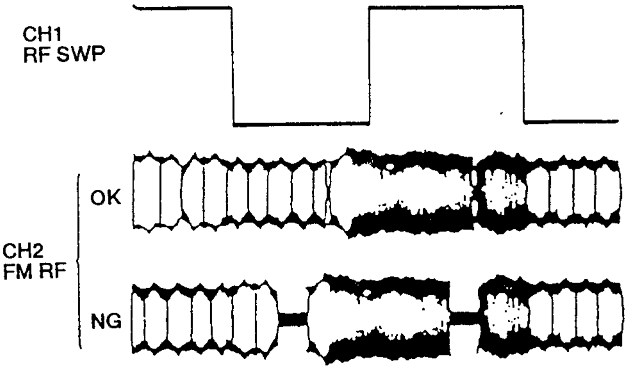


Fig. 7-2-14.

5) Press the PAUSE button.
6) Press the EJECT button.

RP BOARD (Component Side)

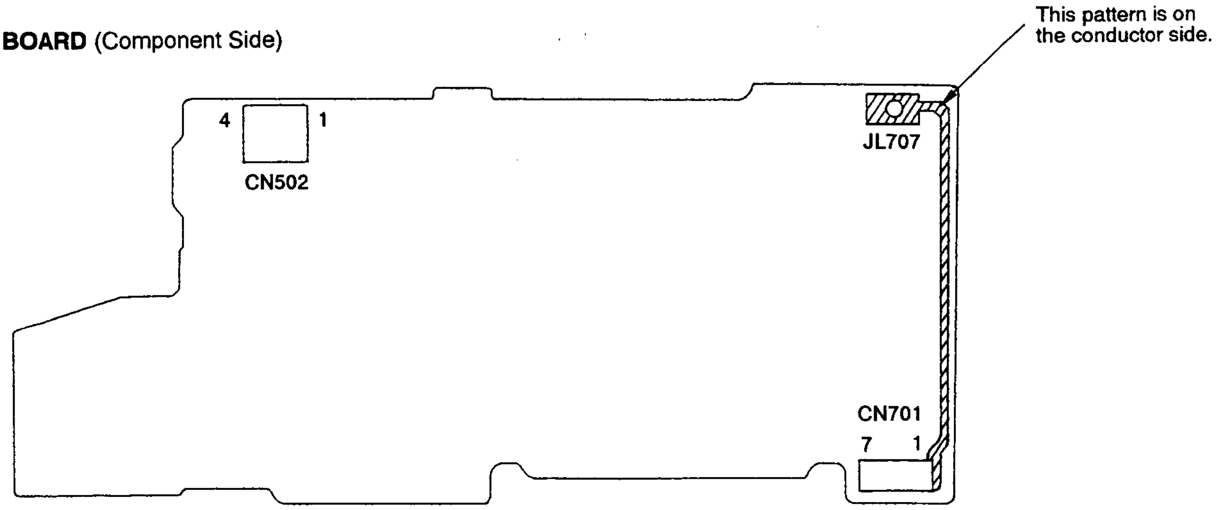

This pattern is on the conductor side.
4
1
CN502
JL707
CN701
7
1

Fig. A

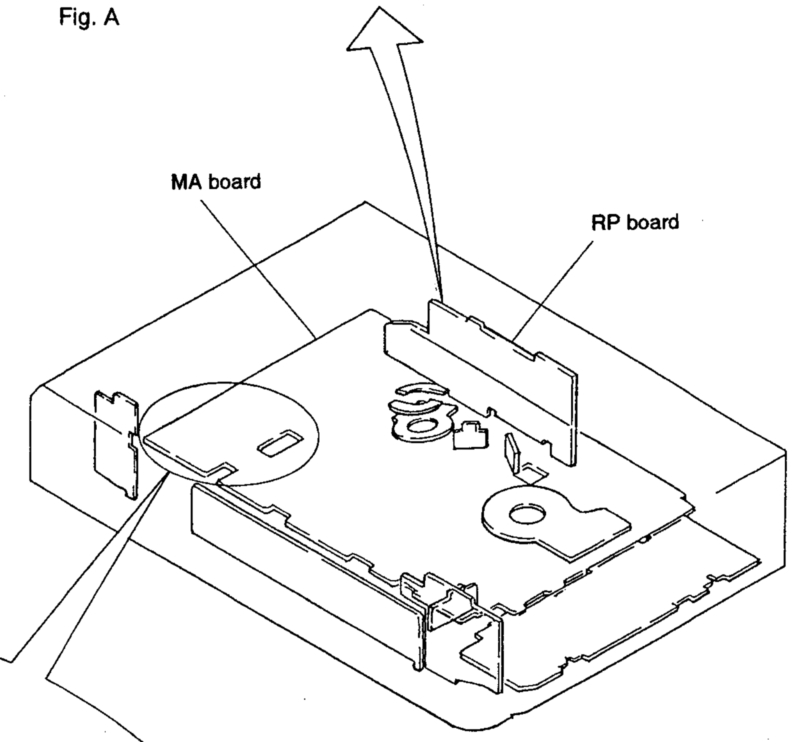

MA board
RP board

Fig. B

MA BOARD (Component Side)

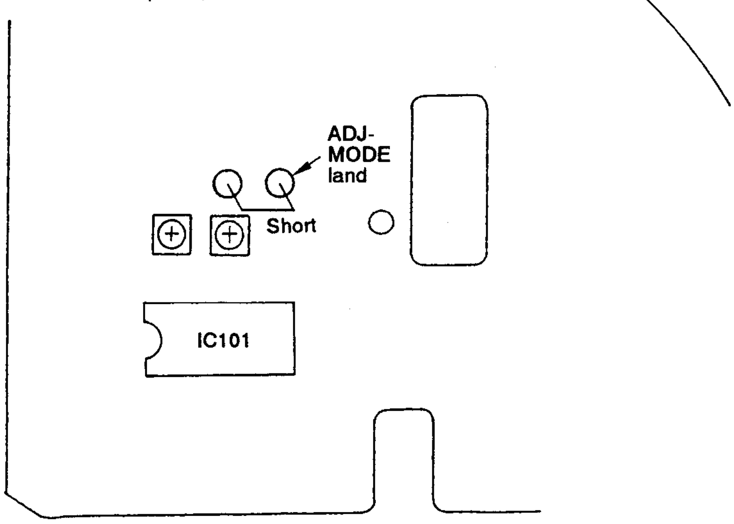

ADJ-MODE land
Short
IC101

Fig. C

SLV-E510EE/E510VC1/E510VC2/E710B/E710EX/E710NC/E710NP/E710UX/
E710VC/E710VP/E810B/E810BZ/E810EE/E810NP/E810UX/E810VC
RMT-V185A/V186C/V186D/V186E/V186F/V187/V187A

SONY.

SERVICE MANUAL

French Model
SLV-E710B/E810B/E810BZ
East European Model
SLV-E510EE/E810EE
Irish Model
SLV-E710EX
North European Model
SLV-E710NC
Spanish Model
SLV-E710NP/E810NP
UK Model
SLV-E710UX/E810UX
German Model
SLV-E510VC1/E510VC2/E710VC/E710VP/E810VC

SUPPLEMENT-1

File this supplement with the service manual.

Subject :
1. Input data of EEP ROM addition
2. Mechanism chassis assembly changed

(SLP610026)

1. INPUT DATA OF EEP ROM ADDITION

When replacing EEP ROM (IC153) on MA-253 board, it is necessary to check the data on page F and C as follows.
When changing the data on page F and C, change the data on page 1 address 00 from 00 to 80.

F, C PAGE MEMORY MAP

	Page F Address				Page C Address					Page F Address				Page C Address			
SLV-	01	02	B5	B6	01	02	03	04	SLV-	01	02	b5	b6	01	02	03	04
E510EE	10	00	24	10	00	00	00	00	E710VP	0F	0A	20	10	00	00	00	00
E510VC1, VC2	0F	01	24	10	00	00	00	00	E810B	0E	01	34	10	00	00	00	00
E710B	0E	00	30	10	00	00	00	00	E810BZ	0E	02	34	10	00	00	00	00
E710EX	0F	05	30	10	00	00	00	00	E810EE	10	01	24	10	00	00	00	00
E710NC	0F	08	30	10	00	00	00	00	E810NP	0F	0C	34	10	00	00	00	00
E710NP	0F	07	30	10	00	00	00	00	E810UX	0F	0B	34	10	00	00	00	00
E710UX	0F	06	30	10	00	00	00	00	E810VC	0F	0D	24	10	00	00	00	00
E710VC	0F	09	20	10	00	00	00	00									

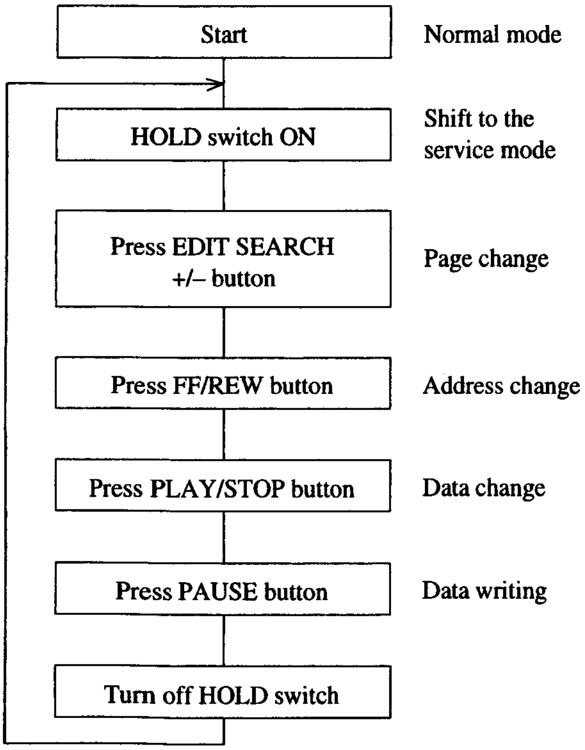
- See next page about the input method of data.

<SERVICE MODE>

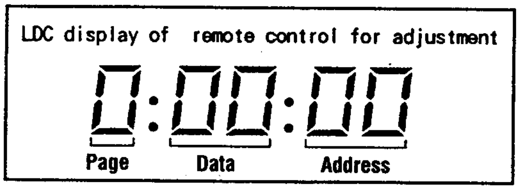
SETTING THE SERVICE MODE

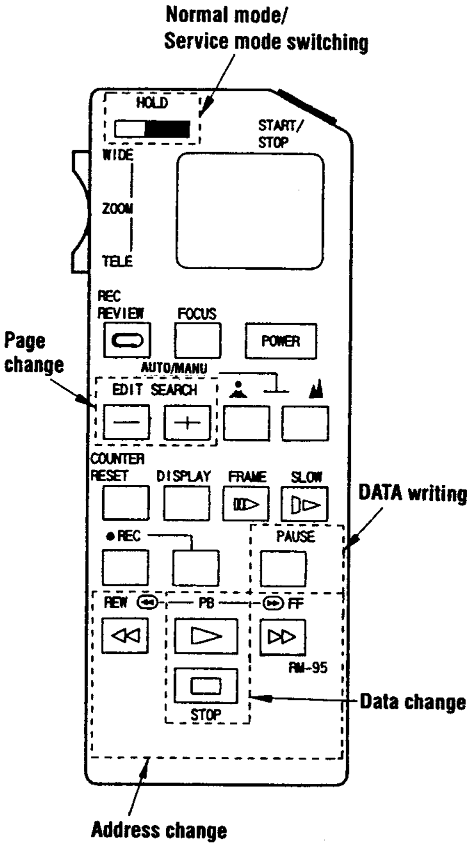
The service mode consists of the adjustment mode which adjusts the EVR and the test mode which shows the condition of the unit.
The unit can be set into the mode and adjustment mode by connecting the adjusting remote commander (Set the HOLD switch to 'HOLD').

(1) Shifting to the service mode using the adjusting remote commander.


Start
Normal mode
HOLD switch ON
Shift to the service mode
Press EDIT SEARCH +/– button
Page change
Press FF/REW button
Address change
Press PLAY/STOP button
Data change
Press PAUSE button
Data writing
Turn off HOLD switch

Adjusting remote command RM-95 (J-6082-053-B)

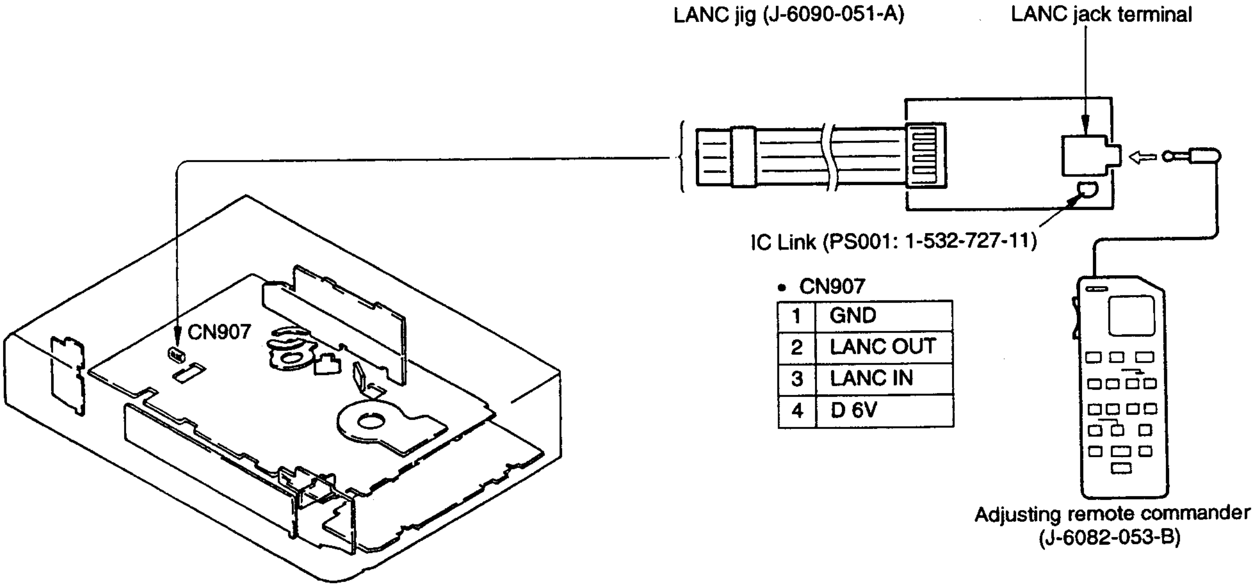

LDC display of remote control for adjustment
0:00:00
Page
Data
Address


Normal mode/
Service mode switching
HOLD
START/
STOP
WIDE
ZOOM
TELE
REC
REVIEW
FOCUS
POWER
Page
change
AUTO/MANU
EDIT SEARCH
COUNTER
RESET
DISPLAY
FRAME
SLOW
DATA writing
●REC
PAUSE
REW
PB
FF
RM-95
STOP
Data change
Address change

Command mode	Command function	Normal LANC Command
Page Up	Page +1	Edit Search +
Page Down	Page –1	Edit Search –
Address Up	Address +1	Fast Forward
Address Down	Address –1	Rewind
Data Up	Data +1	Play Back
Data Down	Data –1	Stop
Store	Writes data in the EEPROM	Pause

(2) Adjusting remote commander connecting procedure:
SLV-E510/E705/E710/E810 series does not have the LANC jack for LANC adjusting remote commander.
When adjusting, connect the LANC jig (J-6090-051-A) to CN907 on MA-253 board.

> **Note** : When connecting or disconnecting LANC jig to CN907 on MA-253 board, first connect the adjusting remote commander to the jack on LANC jig before connecting LANC jig to CN907.
> Connection or disconnection of the adjusting remote commander in the condition LANC jig is connected to CN907 causes IC link to damage itself.



Note : When replacing the EEP ROM (IC153), confirm that the microcomputer (IC151) is a new type. If it is an old type, replace it with a new type first, then write data to the EEP ROM.

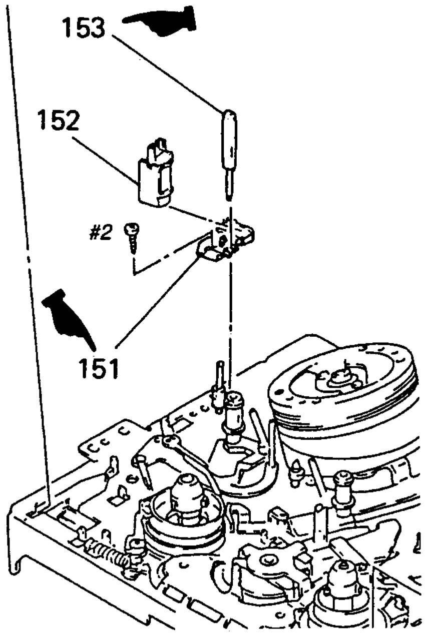
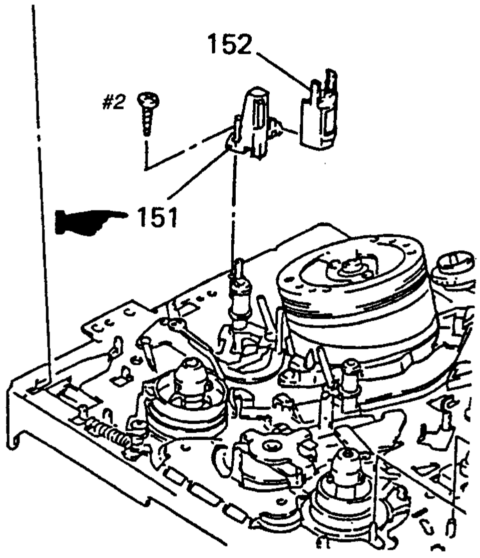
SLV-	Serial No.		SLV-	Serial No.	
	Former Type	New Type		Former Type	New Type
E510EE	B00001-B02000	B02001-	E710UX	B00001-B07139	B07140-
E510VC1	B00001-B01000	B01001-	E710VC	B00001-B08500	B08501-
E510VC2	B00001-B00500	B00501-	E710VP	B00001-B03000	B03001-
			E810B	B00001-B02500	B02501-
			E810BZ	B00001-B00500	B00501-
E710B	B00001-B06023	B06024-	E810EE	B00001-B01500	B01501-
E710EX	B00001-B00400	B00401-	E810NP	B00001-B02000	B02001-
E710NC	B00001-B04100	B04101-	E810UX	B00001-B03500	B03501-
E710NP	B00001-B03200	B03200-	E810VC1	B00001-B06562	B06563-
			E810VC2	B00001-B02800	B02801-

In replacing the microcomputer (IC151), if the microcomputer mounted initially is an old type, the EEP ROM (IC153) must also be replaced.

2. MECHANISM CHASSIS ASSEMBLY CHANGED

2-1. MECHANISM CHASSIS ASSEMBLY (1) (See page 5-7)

☛ : Modificated portion

Former Type			New Type		
					
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
151	X-3945-348-1	FEH ASSY	151	X-3945-348-2	FEH ASSY
153	X-3944-460-1	ROLLER ASSY, TG2			

2-2. MECHANISM CHASSIS ASSEMBLY (3) (See page 5-9)

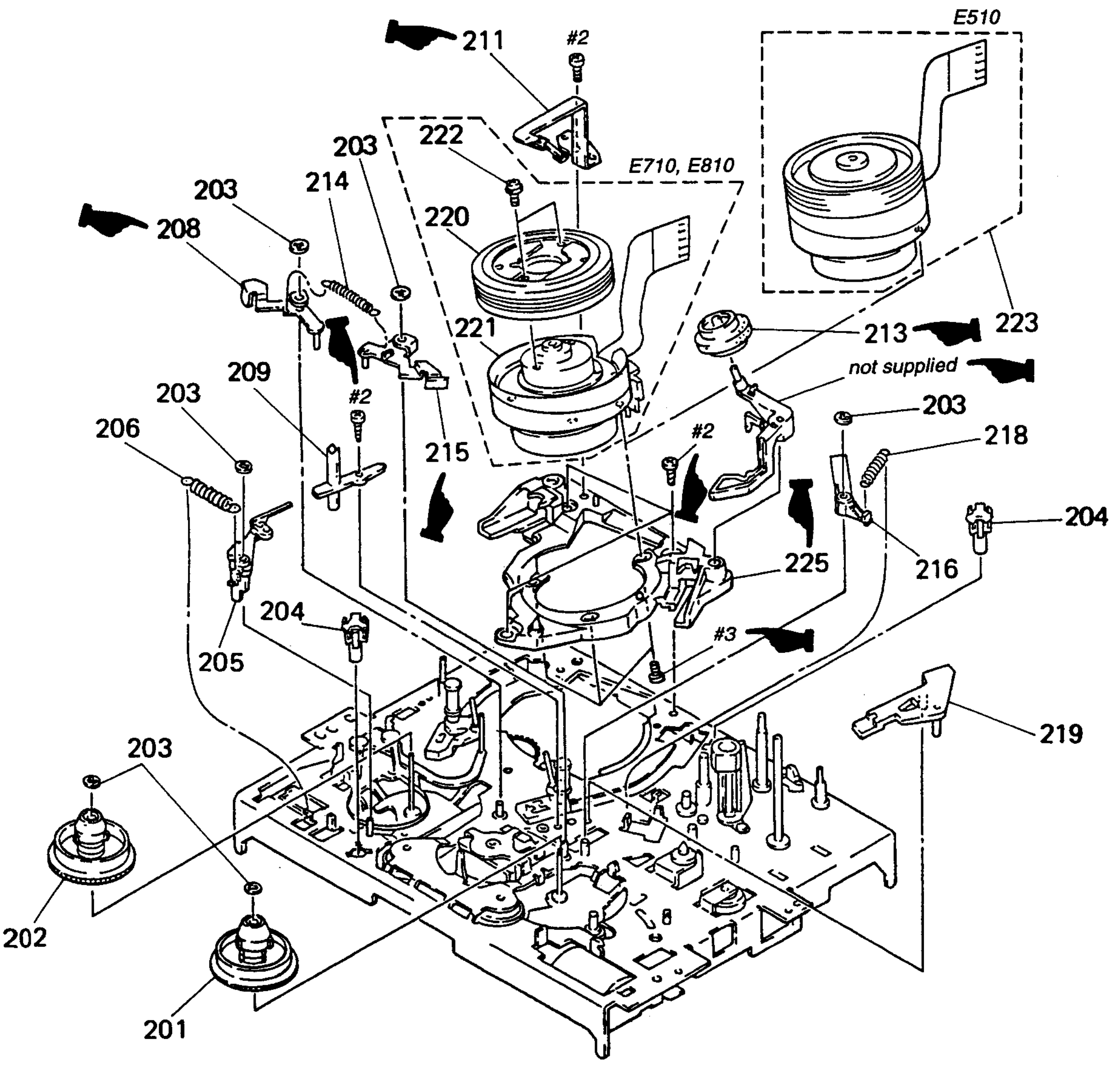
Former Type			New Type		
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
259	3-701-439-21	WASHER			
271	3-965-977-01	RETAINER, CAM GEAR	271	3-965-977-03	RETAINER, CAM GEAR

2-3. HARDWARE LIST (See page 5-30)

Former Type			New Type		
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
#7	7-621-772-08	SCREW +B 2 x 3			

2-4. MECHANISM CHASSIS ASSEMBLY (2) (See page 5-8)

☛ : Modificated portion

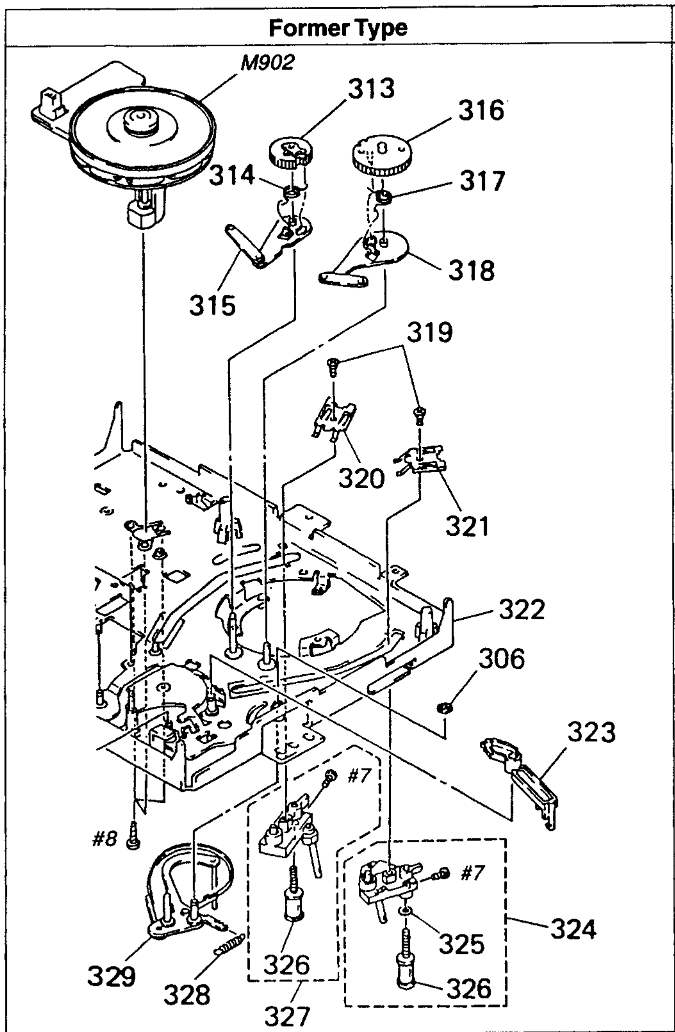

211
#2
E510
203
222
E710, E810
203
214
220
208
221
213
223
not supplied
209
203
#2
203
218
206
215
#2
204
225
216
204
#3
205
219
203
202
201

Former Type			New Type		
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
207	3-961-441-01	SCREW (3 x 8)			
208	X-3945-650-1	BRAKE (S) ASSY, MAIN	208	X-3945-443-1	BRAKE (S) ASSY, MAIN
210	3-958-389-01	CATCHER			
211	X-3943-899-5	GROUND ASSY, SHAFT	211	X-3943-899-7	GROUND ASSY, SHAFT
212	3-321-393-01	WASHER, STOPPER			
213	X-3944-363-1	ROLLER ASSY, HC	213	X-3944-363-4	ROLLER ASSY, HC
215	X-3945-651-1	ARM (T) ASSY, MAIN BRAKE	215	X-3945-444-1	ARM (T) ASSY, MAIN BRAKE
217	X-3943-896-1	ARM, ASSY, HC		not supplied	
			225	3-969-629-01	BASE, DRUM

2-5. MECHANISM CHASSIS ASSEMBLY (4) (See page 5-10)

☛ : Modificated portion

Former Type


M902
313
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317
318
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320
321
322
306
323
#7
#8
#7
324
325
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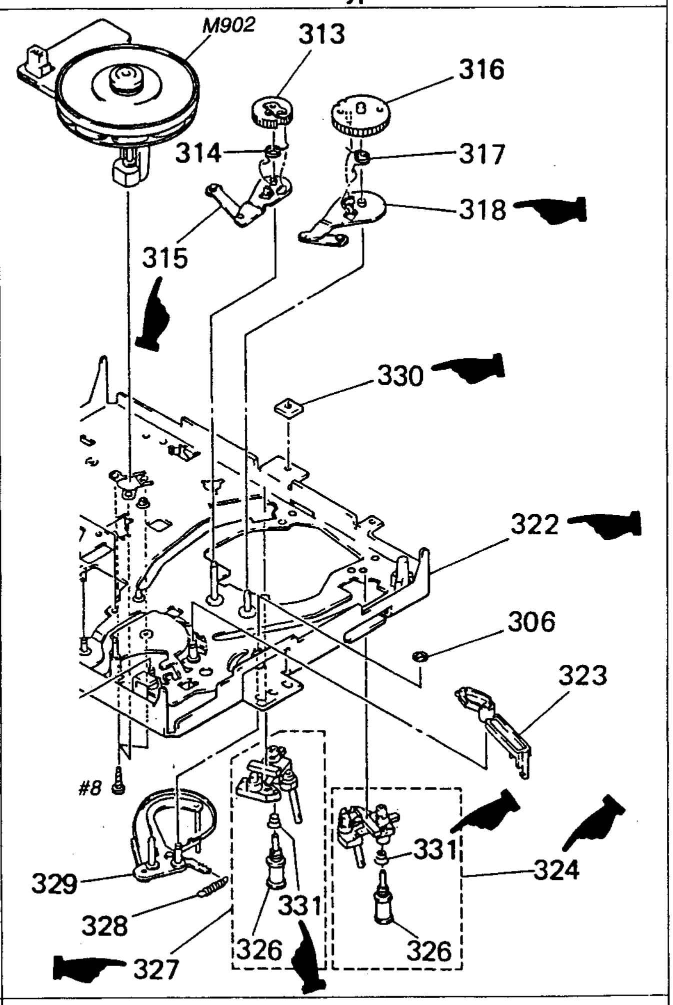
328
326
327

Ref. No.	Part No.	Description
315	X-3943-891-1	LEVER (T) ASSY, LOADING
318	X-3943-890-1	LEVER (S) ASSY, LOADING
319	3-960-720-01	SCREW
320	3-960-688-01	SPRING, LEAF (T), LOADING
321	3-960-687-01	SPRING, LEAF (T), LOADING
322	X-3945-485-1	CHASSIS ASSY, MECHANICAL
324	A-6750-316-A	SHUTTLE (S) BLOCK ASSY
325	3-962-874-01	O-RING
327	A-6750-314-A	T BLOCK ASSY, SHUTTLE

New Type


M902
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316
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323
#8
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326

Ref. No.	Part No.	Description
315	X-3943-891-3	LEVER (T) ASSY, LOADING
318	X-3943-890-2	LEVER (S) ASSY, LOADING
322	X-3945-485-4	CHASSIS ASSY, MECHANICAL
324	A-6750-324-A	SHUTTLE (S) BLOCK ASSY
327	A-6750-325-A	T BLOCK ASSY, SHUTTLE
330	3-965-923-01	RUBBER, SPACER
331	3-965-178-01	SPRING

English
96G0566-1

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Home A&V Products Company

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SLV-E510EE/E510VC1/E510VC2/E710B/E710EX/E710NC/E710NP/E710UX/ E710VC/E710VP/E810B/E810BZ/E810EE/E810NP/E810UX/E810VC

RMT-V185A/V186C/V186D/V186E/V186F/V187/V187A

SERVICE MANUAL

15285

French Model
SLV-E710B/E810B/E810BZ

East European Model
SLV-E510EE/E810EE

Irish Model
SLV-E710EX

North European Model
SLV-E710NC

Spanish Model
SLV-E710NP/E810NP

UK Model
SLV-E710UX/E810UX

German Model
SLV-E510VC1/E510VC2/E710VC/E710VP/E810VC

H MECHANISM

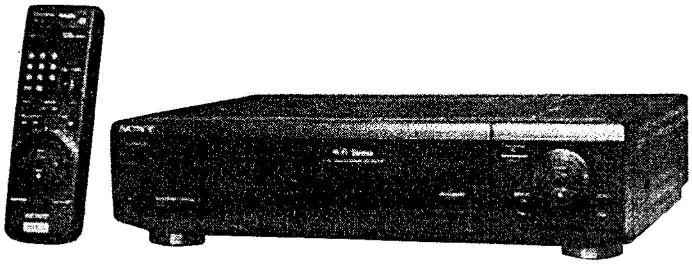

Photo: SLV-E810

- **Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENTS IV for MECHANICAL ADJUSTMENTS. (9-973-623-11)**

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* The abbreviations of E510, E710 and E810 contained in this service manual are indicated when these models are common to all their corresponding models as given below.

Abbreviated model name	E510	E710	E810
All model names SLV-	E510EE/E510VC1/E510VC2	E710B/E710EX/E710NC/E710NP/ E710UX/E710VC/E710VP	E810B/E810BZ/E810EE/E810NP/ E810UX/E810VC

SPECIFICATIONS

System

Channel coverage

E710UX/E810UX:
- PAL
- UHF E21 to E69

E510EE/E810EE:
- VHS E2-E12, R1-R12
- UHF E21-E69, R21-R69
- CATV S1-S41, S01-S05

E710B/E810B/E810BZ:
- SECAM (L)
- VHF F2 to F10
- CATV B to Q
- HYPER S21 to S41
- UHF F21 to F69
- PAL (B/G)
- VHF E2 to E12
- VHF Italian channel A to H
- CATV S01 to S05, S1 to S20
- HYPER S21 to S41
- UHF E21 to E69

E710EX:
- PAL
- VHF IA to IJ, SA10 to SA13
- UHF B21 to B69
- CATV S01 to S05, S1 to S20
- HYPER S21 to S41

E510VC1/E510VC2/E710NC/E710NP/E710VC/E710VP/ E810NP/E810VC:
- PAL (B/G)
- VHF E2 to E12
- VHF Italian channel A to H
- UHF E21 to E69
- CATV S01 to S05, S1 to S20
- HYPER S21 to S41

RF output signal
- UHF channels 28 to 55

Aerial out
- 75-ohm asymmetrical aerial socket

Inputs and outputs

⊖→ EURO-AV (LINE-1):

CANAL+: E710B/E810B/E810BZ

PAY-TV DECODER/CANAL+: E510VC1/E510VC2/E710NP/E710VC/E810NP

→⊖ EURO-AV (LINE-3 IN) : E810UX
- 21-pin
- Video input: pin 20
- Audio input: pins 2 and 6
- Video output: pin 19
- Audio output: pins 1 and 3

– Continued on next page –

VHS PAL NTSC4.43 Hi-Fi **VIDEO CASSETTE RECORDER**

VIDEOPlus+ SHOWVIEW

SONY®

MICROFILM

⇥ EURO-AV (LINE-2 IN): E710EX/E710NC/E710UX/E710VP
  21-pin
  Video input: pin 20
  Audio input pins 2 and 6
LINE-2 IN: E510/E810
  VIDEO IN, phono jack (1)
  Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative
  AUDIO IN, phono jack (2)
  Input level: 327 mVrms
  Input impedance: more than 47 kilohms
AUDIO OUT: E710/E810
  Phono jack (2)
  Rated output level: 327 mVrms
  Load impedance: 47 kilohms
  Output impedance: less than 10 kilohms

General

Power requirements
  220 - 240 V AC, 50 Hz
Power consumption
  25 W
Operating temperature
  5°C to 40°C
Storage temperature
  -20°C to 60°C
Dimensions
  Approx. 430 × 109 × 323mm (w/h/d): E510/E810
  Approx. 430 × 109 × 310mm (w/h/d): E710
  including projecting parts and controls
Mass
  Apperox. 4.5 kg: E510/E710
  Apperox. 4.7 kg: E810

Supplied accessories

Remote commander (1)
R6 (size AA) batteries (2)
Aerial cable (1)
Audio cable (1)
Mains lead (1)
21-pin adaptor (1): E510EE/E810EE

Design and specifications are subject to change without notice.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.